

February 3, 2003

Re: MasterBrand Cabinets, Inc.-Plants4/22 037-13893-00051

TO: Interested Parties / Applicant

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision - PSD Permit Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision on the enclosed Prevention of Significant Deterioration (PSD) Permit. Pursuant to IC 13-15-5-3 and the federal requirements codified at 40 CFR Part 124.15 (b), this permit is effective thirty (30) days after the service of this notice. This permit may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1 require that you file a petition for administrative review. This petition describing your intent must be submitted to the Office of Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within eighteen (18) days of service of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) the date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location and date of this notice. Additionally, IC 13-15-6-2 requires that a petition include:

- (1) the name and address of the person making the request; and
- (2) the interest of the person making the request; and
- (3) identification of any persons represented by the person making the request; and
- (4) the reasons, with particularity, for the request; and
- (5) the issues, with particularity, proposed for consideration at the hearing; and

- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

(over)

If you wish to challenge this decision under federal law, 40 CFR 124.19 requires that you petition the Environmental Appeals Board **within thirty (30) days of the service of this notice**, at the following address:

U.S. Environmental Protection Agency
Environmental Appeals Board (MC-1103B)
Ariel Rios Building
1200 North Pennsylvania Ave., N.W.
Washington, D.C. 20406

Pursuant to 40 CFR Part 124.19, the petition must include a statement of the reasons supporting review, including a demonstration that any issues being raised were raised during the public comment period or public hearing. When appropriate, the petition must also include a showing that the permit condition in question is based on:

- (1) a finding of fact or conclusion of law which is clearly erroneous; or,
- (2) an exercise of discretion or an important policy consideration which the Environmental Appeals Board should, in its discretion, review.

Pursuant to 40 CFR Part 124.19, the Environmental Appeals Board shall provide public notice of any grant or review. Notice of denial or review shall be sent only to the person(s) requesting review.

If you have technical questions regarding the enclosed document, please call the Office of Air Quality, Permits Branch at 317-233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178

Enclosures



Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

PART 70 SIGNIFICANT SOURCE MODIFICATION AND MAJOR MODIFICATION UNDER PREVENTION OF SIGNIFICANT DETERIORATION

OFFICE OF AIR QUALITY

**MasterBrand Cabinets, Inc. -Plants 4/22
614 West Third Street
Ferdinand, IN 47532**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This permit is issued under the provisions of 326 IAC 2 and 40 CFR Part 52.21 (Prevention of Significant Deterioration) and 40 CFR 124 (Procedure for Decision Making), with conditions listed on the attached pages.

This approval is also issued in accordance with 40 CFR 70 Appendix A and Contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et.seq. (Clean Air Act as amended by the 1990 Clean Air Act amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Significant Source Modification No.: 037-13893-00051

Issued by: Original Signed by Paul Dubenetzky
Paul Dubenetzky, Branch Chief
Office of Air Quality

Issuance Date: February 3, 2003

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SECTION A

SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a wood kitchen and bathroom cabinet manufacturing source.

Responsible Official: Vice President Stock Operations
Source Address: 614 West Third Street, Ferdinand, IN 47532
Mailing Address: One MasterBrand Cabinets Drive, P.O.Box 420, Jasper, IN 47546
Phone Number: 812-482-2527
SIC Code: 2434
County Location: Dubois
County Status: Attainment for all criteria pollutants
Source Status: Part 70 Permit Program
Major Source under PSD
Major Source pursuant to Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(15)]

This modification to a stationary source is approved to construct and operate the following emission units and pollution control devices:

One electrostatic finishing line consisting of the following emission units:

1. One (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.
2. The following equipment, all of which is controlled by one (1) natural gas-fired regenerative thermal oxidizer with a maximum heat input rate of 7.9 MMBtu per hour:
 - (a) two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls,
 - (b) two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls, and
 - (c) two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls.
3. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter as control, and exhausting to Stack S3.
4. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter as control, and exhausting to Stack TC3.

5. one (1) natural gas-fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to 40 CFR 124.15, 40 CFR 124.19, and 40 CFR 124.20, the effective date of this permit will be thirty (30) days after the service of notice of the decision, if comments are received during the public comment period for this permit. Three (3) days shall be added to the thirty (30) day period if service of notice is by mail.

B.3 Permit Expiration Date [326 IAC 2-2-8(a)(1)] [40 CFR 52.21(r)(2)]

Pursuant to 40 CFR 52.21(r)(2) and 326 IAC 2-2-8(a)(1) (PSD Requirements: Source Obligation) this permit to construct shall expire if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is discontinued for a continuous period of eighteen (18) months or more, or if construction is not completed within reasonable time. IDEM may extend the eighteen (18) month period upon satisfactory showing that an extension is justified.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application or the permit. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emissions units differs from the construction proposed in the application or the permit in a manner that is regulated under the provisions of 326 IAC 2-2, the source may not begin operation until the source modification has been revised pursuant to the provisions of that rule and the provisions of 326 IAC 2-1.1-6 and an Operation Permit Validation Letter is issued.
- (c) If actual construction of the emissions units differs from the construction proposed in the application or the permit in a manner that is not regulated under the provisions of 326 IAC 2-2, the source may not begin operation until the source modification has been revised pursuant to the provisions of that rule and the provisions of 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.
- (d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (e) In the event that the Part 70 application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:
 - (1) If the Part 70 draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Part 70 draft.

- (2) If the Part 70 permit has gone through final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go through a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Part 70 permit at the time of issuance.
- (3) If the Part 70 permit has gone through public notice, but has not gone through final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Part 70 permit, and the Title V permit will issued after EPA review.

B.5 NESHAP Reporting Requirement (40 CFR 63.807)

Pursuant to the National Emission Standards for Hazardous Air Pollutants (NESHAP), Part 63, Subpart JJ, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Initial Notification per 40 CFR 63.9(b) through (d); and
- (b) Notification of compliance status as required by 40 CFR 63.9(h).

Reports are to be sent to:
Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAQ. The requirements of 40 CFR Part 63 are also federally enforceable.

SECTION C

GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The PMP does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

C.3 Inspection and Entry [326 IAC 2-7-6]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this approval;
- (b) Have access to and copy any records that must be kept under this title or the conditions of this approval or any operating permit revisions;
- (c) Inspect, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this approval or any operating permit revisions;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this approval or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this approval or applicable requirements.

C.4 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

- (a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this approval, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAM of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAM, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

If required by Section D, all monitoring and record keeping requirements shall be implemented within 120 days of permit issuance with the exception of monitoring and record keeping requirements associated with the regenerative thermal oxidizer (RTO), which shall be implemented upon commencement of operation of the RTO. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Whenever a condition in this permit requires the measurement of a temperature and/or flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.12 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-7-5] [326 IAC 2-7-6]

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- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAM upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
 - (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.

- (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall constitute a violation of the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (e) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.13 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967
 - (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to non-compliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required data, reports and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when the new or modified equipment begins normal operation.

C.16 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period.

The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

One electrostatic finishing line consisting of the following emission units:

1. One (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.
2. The following equipment, all of which is controlled by one (1) natural gas-fired regenerative thermal oxidizer with a maximum heat input rate of 7.9 MMBtu per hour:
 - (a) two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls,
 - (b) two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls, and
 - (c) two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls.
3. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter as control, and exhausting to Stack S3.
4. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter as control, and exhausting to Stack TC3.
5. one (1) natural gas-fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Volatile Organic Compound – Best Available Control Technology [326 IAC 2-2-3] [326 IAC 8-1-6]

- (1) The Permittee shall install and operate a Regenerative Thermal Oxidizer (RTO) to control the VOC emissions from the Stain booths STB-3 and STB-4, Sealer booths SB-7 and SB-8 and Topcoat booths TCB9 and TCB-10.
- (2) The input VOC shall be limited as follows:
 - (a) For the Stain, Sealer and Topcoat booths:
the input of VOC shall be limited such that, in conjunction with the use of regenerative thermal oxidizer, the VOC emissions shall not exceed 200 tons per twelve (12) consecutive month period, with compliance demonstrated at the end of each month.
 - (b) For the Toner and Touchup booths:
the input of VOC shall not exceed 119 tons per twelve (12) consecutive month period, rolled on monthly basis. This VOC usage limitation is equivalent to VOC emissions of 119 tons per twelve (12) consecutive month period, with compliance

demonstrated at the end of each month.

D.1.2 Volatile Organic Compound – Transition period BACT [326 IAC 2-2-3] [326 IAC 8-1-6]

- (a) During the period from the effective date of the permit to the date of commencement of operation of the RTO to control VOC emissions from the stain, sealer and topcoat booths, the input of VOC to the stain, sealer and topcoat booths shall not exceed 381 tons per year. Depending upon the length of time between permit effectiveness date and the commencement of operation of the RTO date, this limit shall be implemented as follows:
 - (i) for the period of the first quarter (period of three calendar months) from the effective date of the permit, the input of VOC to the stain, sealer and topcoat booths shall not exceed 95.25 tons per quarter.
 - (ii) for the subsequent months up to the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that the total usage divided by the accumulated months of operation from the date of effectiveness of the permit shall not exceed 31.75 tons per month.
- (b) During the time period from the date of commencement of operation of the RTO up to 12 months of operation, the input of VOC to the stain, sealer and topcoat booths shall be limited, such that in conjunction with the operation of the RTO the VOC emissions shall not exceed 200 tons per year. This limit shall be implemented as follows:
 - (i) for the period of the first quarter (period of three calendar months) from the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that in conjunction with the operation of the RTO, the VOC emissions shall not exceed 50 tons per quarter.
 - (ii) for the subsequent months up to 12 months from the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that that in conjunction with the operation of the RTO, the total VOC emissions divided by the accumulated months of operation from the date of commencement of operation of the RTO shall not exceed 16.67 tons per month.
- (c) During the first twelve (12) months of operation after the effective date of the permit, except for the first quarter (period of three calendar months) from the effective date of the permit, the input of VOC shall be limited such that the total usage divided by the accumulated months of operation shall not exceed 9.9 tons per month for the toner and touchup booths. For the period of the first quarter from the effective date of the permit, the input of VOC to the toner and touchup booths shall be limited to no greater than 29.7 tons.

D.1.3 General Provisions Relating to HAPs [326 IAC 20-1-1][40 CFR 63, Subpart A]

The provisions of 40 CFR 63, Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the electrostatic finishing line described in this section except when otherwise specified in 40 CFR 63, Subpart JJ.

D.1.4 Wood Furniture Manufacturing Operations NESHAP [40 CFR Part 63, Subpart JJ]

- (a) The wood furniture coating operations are subject to 40 CFR Part 63, Subpart JJ, which is incorporated by reference as 326 IAC 20-1, and shall be in compliance upon startup. A copy of the rule is attached.
- (b) Pursuant to 40 CFR 63, Subpart JJ, the wood furniture coating operations shall comply with the following conditions:

- (1) Limit the Volatile Hazardous Air Pollutants (VHAP) emissions from operations as follows:
 - (A) Achieve a weighted average volatile hazardous air pollutant (VHAP) content across all coatings of one (1.0) pound VHAP per pound solids; or
 - (B) Use compliant finishing materials in which all stains, washcoats, sealers, topcoats, basecoats and enamels have a maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied. Thinners used for on-site formulation of washcoats, basecoats, and enamels have a three percent (3.0%) maximum VHAP content by weight. All other thinners have a ten percent (10.0%) maximum VHAP content by weight; or
 - (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids; or
 - (D) Use a combination of (A), (B), and (C).
- (2) Limit VHAP emissions contact adhesives as follows:
 - (A) For foam adhesives used in products that meet the upholstered seating flammability requirements, the VHAP content shall not exceed one and eight-tenths (1.8) pound VHAP per pound solids.
 - (B) For all other contact adhesives (except aerosols and contact adhesives applied to nonporous substrates) the VHAP content shall not exceed one (1) pound VHAP per pound solids.
 - (C) Use a control device to limit emissions to one (1) pound VHAP per pound solids.
- (3) The strippable spray booth material shall have a maximum VOC content of eight-tenths (0.8) pounds VOC per pound solids.

D.1.5 Work Practice Standards [40 CFR 63.803] [326 IAC 2-2-3] [326 IAC 8-1-6]

Pursuant to 40 CFR 63, Subpart JJ, 326 IAC 2-2-3 and 326 IAC 8-1-6, the Permittee shall prepare and maintain a written work practice implementation plan within sixty (60) calendar days after the compliance date. The work practice implementation plan must define environmentally desirable work practices for each wood furniture manufacturing operation and at a minimum address each of the following work practice standards as defined under 40 CFR 63.803:

- (a) Operator training course.
- (b) Leak inspection and maintenance plan.
- (c) Cleaning and washoff solvent accounting system.
- (d) Chemical composition of cleaning and washoff solvents.
- (e) Spray booth cleaning.
- (f) Storage requirements.
- (g) Conventional air spray guns shall only be used under the circumstances defined under 40 CFR 63.803(h).
- (h) Line cleaning.
- (i) Gun cleaning.
- (j) Washoff operations.
- (k) Formulation assessment plan for finishing operations.

D.1.6 Particulate emissions limitations, work practices, control technologies [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2 (Particulate emissions limitations, work practices, control technologies) the electrostatic finishing line shall be controlled by a dry particulate filter or an equivalent control device and the Permittee shall operate the control device in accordance with manufacturer's specifications.

D.1.7 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this emissions unit and any control devices.

Compliance Determination Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.8 Regenerative Thermal Oxidizer [326 IAC 2-2-3] [326 IAC 8-1-6]

- (a) Within 270 days of effective date of this permit, the Permittee shall install and commence operation of a natural gas fired regenerative thermal oxidizer with a maximum heat input capacity of 7.9 MMBtu per hour to control VOC emissions from the stain, sealer and top coat booths of the electrostatic finishing line.
- (b) The regenerative thermal oxidizer, shall operate at all times when the electrostatic finishing line is in operation to control VOC emissions, to comply with 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR Part 63 Subpart JJ, if compliance with the 40 CFR Part 63 Subpart JJ is based on use of add on control.
- (c) The regenerative thermal oxidizer shall operate with a capture efficiency of no less than fifty (50) percent and destruction efficiency of no less than ninety five (95) percent.
- (d) After the results from the performance test become available, as required by Condition D.1.10, the compliance demonstrations shall use the actual measured capture and control efficiencies.

D.1.9 Dry Filter

The dry filters for electrostatic finishing line should be in place and operating at all times when electrostatic finishing line is operating.

D.1.10 Testing Requirements [326 IAC 3-6] [326 IAC 2-7-6(1), (6)]

- (a) Within 60 days of achieving maximum production rate, but no later than 180 days after the installation of the regenerative thermal oxidizer, the Permittee shall perform VOC capture and destruction efficiency testing utilizing methods as approved by the Commissioner to show compliance with Condition D.1.1 and Condition D.1.8. Testing shall be conducted in accordance with Section C - Performance Testing.
- (b) The Permittee shall determine the hourly average temperature, minimum operating temperature and duct pressure or fan amperage for the thermal oxidizer from the most recent valid stack test that demonstrates compliance with the limits and efficiencies in conditions D.1.1 and D.1.8 as approved by IDEM.
- (c) IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the VOC limit specified in Condition D.1.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

D.1.11 Volatile Organic Compounds (VOC)

Compliance with Condition D.1.1 and D.1.2 shall be demonstrated at the end of each month. This shall be based on the total volatile organic compound emitted for the previous month, and adding it to previous 11 months total VOC emitted so as to arrive at VOC emission for 12 consecutive

months period. The VOC emissions for a month, as required by conditions D.1.1 (2)(a) and D.1.2 (b) can be arrived at using the following equation for VOC usage:

$$\text{VOC (tons) emitted} = [(\text{VOC (tons) input}) \times (100 - \% \text{control efficiency of the regenerative thermal oxidizer})] + [\text{uncontrolled VOC (tons) input}]$$

Where VOC input is based on the formulation data supplied by the coating manufacturer. IDEM, OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4. Control efficiency of the thermal oxidizer can be calculated by multiplying the capture efficiency with the destruction efficiency.

D.1.12 Compliance Procedures and Monitoring Requirements [40 CFR 63.804]

Pursuant to 40 CFR 63, Subpart JJ:

- (a) Initial compliance according to 40 CFR 63.804(d)(1), (d)(2) or (e)(1) shall be demonstrated by submitting the Initial Compliance Status Report.
- (b) To comply according to 40 CFR 63.804(d)(3) or (e)(2), initial performance testing of the thermal oxidizer must be conducted in accordance with the following requirements:
 - (1) For finishing materials, 40 CFR 63.804(f)(4)(i), (ii), (iii), (iv)(A), and (v);
 - (2) For contact adhesives, 40 CFR 63.804(f)(6)(i), (ii), (iii), (iv)(A), and (v); and
 - (3) Performance test methods and procedures specified in 40 CFR 63.805(b).

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.13 Monitoring (Particulate)

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the electrostatic finishing line stacks while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

D.1.14 Regenerative Thermal Oxidizer

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO for measuring operating temperature when the electrostatic finishing line is operational. The output of this system shall be recorded as continuous and hourly average readings. From the date of commencement of operation of RTO until the

approved stack test results are available, the Permittee shall operate the RTO at or above the hourly average temperature of 1350 °F.

- (b) The Permittee shall determine the hourly average temperature, minimum operating temperature and duct pressure/fan amperage for the RTO from the most recent valid stack test that demonstrates compliance with the limits and efficiencies in conditions D.1.1 and D.1.8, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee when operating the thermal oxidizer shall maintain
 - (i) the hourly average temperature at or above the hourly average temperature as observed during the compliant stack test.
 - (ii) the continuous operating temperature at or above the minimum operating temperature as observed during the compliant stack test.
 - (iii) The duct pressure/fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

D.1.15 Compliance Procedures and Monitoring Requirements [40 CFR 63.804]

Pursuant to 40 CFR 63, Subpart JJ:

- (a) Continuous compliance according to 40 CFR 63.804(d)(1), (d)(2) or (e)(1) shall be demonstrated by submitting the semiannual reports required in Condition D.1.18 (c).
- (b) To demonstrate continuous compliance with 40 CFR 63.804(d)(3) or 63.804(e)(2), monitoring shall be conducted in accordance with the following requirements:
 - (1) For finishing materials, 40 CFR 63.804(g)(4)(i), (ii)(A), and (iv);
 - (2) For contact adhesives, 40 CFR 63.804(g)(6)(i), (ii)(A), and (iv); and
 - (3) Performance test methods and procedures specified in 40 CFR 63.805(b).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.16 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1 and D.1.2, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.1.1 and D.1.2.
 - (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.
 - (2) A log of the dates of use;
 - (3) The cleanup solvent usage for each month;
 - (4) The total VOC usage for each month for the electrostatic finishing line;
 - (5) The weight of VOCs emitted for each compliance period;
 - (6) The continuous records of hourly average and minimum operating temperature for

the regenerative thermal oxidizer and the temperature used to demonstrate compliance during the most recent compliance stack test; and

- (7) daily records of the duct pressure or fan amperage.
- (b) To document compliance with Condition D.1.4, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be complete and sufficient to establish compliance with the VHAP usage limits established in Condition D.1.4.
 - (1) Certified Product Data Sheet for each finishing material, thinner, contact adhesive and strippable booth coating.
 - (2) The HAP content in pounds of VHAP per pounds of solids, as applied, for all finishing materials and contact adhesives used.
 - (3) The VOC content in pounds of VOC per pounds of solids, as applied, for each strippable coating used.
 - (4) The VHAP content in weight percent of each thinner used.
 - (5) When the averaging compliance method is used, copies of the averaging calculations for each month as well as the data on the quantity of coating and thinners used to calculate the average.
- (c) To document compliance with Condition D.1.5, the Permittee shall maintain records demonstrating actions have been taken to fulfill the Work Practice Implementation Plan.
- (d) To document compliance with Condition D.1.13, the Permittee shall maintain a log of weekly overspray observations, daily and monthly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.17 Reporting Requirements

- (a) The Permittee shall submit monthly reports from the date of effectiveness of this permit till the end of the month after commencement of operation of the RTO about the status and progress of the RTO installation. These reports shall be submitted to the address listed in Section – C General Reporting Requirements of this permit and does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (b) A quarterly summary of the information to document compliance with Condition D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (c) An Initial Compliance Report to document compliance with Condition D.1.4 and the Certification form shall be submitted within sixty (60) days following startup. The Initial Compliance Report must include data from the entire month that the compliance date falls.
- (d) Pursuant to 40 CFR 63, Subpart JJ, a semi-annual Continuous Compliance Report to document compliance with Condition D.1.4 and the Certification form, shall be submitted

within thirty (30) days after the end of the six (6) months being reported.

- (1) For the first year following the compliance date, the six (6) month period shall begin on the first day of the month after which the operation commences.
 - (2) Following the first year of reporting, the semi-annual Continuous Compliance Report shall be submitted on a calendar year basis with the reporting periods ending June 30 and December 31.
- (e) For use of the regenerative thermal oxidizer to comply with the 40 CFR 63 Subpart JJ, the excess emissions and continuous monitoring system performance report and summary report required in 40 CFR 63.807(d).
- (f) The reports required in (b) and (c) of this condition shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Phone: 317-233-5674
Fax: 317-233-5967**

**PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT**

Source Name: MasterBrand Cabinets, Inc.
Source Address: 614 West Third Street, Ferdinand, IN 47532
Mailing Address: 614 West Third Street, Ferdinand, IN 47532
Permit No.: 037-13893-00051

This form consists of 2 pages

Page 1 of 2

9 This is an emergency as defined in 326 IAC 2-7-1(12)
The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
The Permittee must submit notice in writing or by facsimile within two (2) days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:

Control Equipment:

Permit Condition or Operation Limitation in Permit:

Description of the Emergency:

Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

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| |
|---|
| Date/Time Emergency started: |
| Date/Time Emergency was corrected: |
| Was the facility being properly operated at the time of the emergency? Y N |
| Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NO _x , CO, Pb, other: |
| Estimated amount of pollutant(s) emitted during emergency: |
| Describe the steps taken to mitigate the problem: |
| Describe the corrective actions/response steps taken: |
| Describe the measures taken to minimize emissions: |
| If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value: |

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

**PART 70 SOURCE MODIFICATION
CERTIFICATION**

Source Name: MasterBrand Cabinets, Inc.
Source Address: 614 West Third Street, Ferdinand, IN 47532
Mailing Address: 614 West Third Street, Ferdinand, IN 47532
Permit No.: 037-13893-00051

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- 9 Test Result (specify) _____
- 9 Report (specify) _____
- 9 Notification (specify) _____
- 9 Affidavit (specify) _____
- 9 Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: MasterBrand Cabinets, Inc.
Source Address: 614 West Third Street, Ferdinand, IN 47532
Mailing Address: 614 West Third Street, Ferdinand, IN 47532
Permit No.: 037-13893-00051

Months: _____ to _____ Year: _____

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| | |
|--|-------------------------------|
| This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period". | |
| 9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD. | |
| 9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD | |
| Permit Requirement (specify permit condition #) | |
| Date of Deviation: | Duration of Deviation: |
| Number of Deviations: | |
| Probable Cause of Deviation: | |
| Response Steps Taken: | |
| Permit Requirement (specify permit condition #) | |
| Date of Deviation: | Duration of Deviation: |
| Number of Deviations: | |
| Probable Cause of Deviation: | |
| Response Steps Taken: | |

| | |
|--|-------------------------------|
| Permit Requirement (specify permit condition #) | |
| Date of Deviation: | Duration of Deviation: |
| Number of Deviations: | |
| Probable Cause of Deviation: | |
| Response Steps Taken: | |
| Permit Requirement (specify permit condition #) | |
| Date of Deviation: | Duration of Deviation: |
| Number of Deviations: | |
| Probable Cause of Deviation: | |
| Response Steps Taken: | |
| Permit Requirement (specify permit condition #) | |
| Date of Deviation: | Duration of Deviation: |
| Number of Deviations: | |
| Probable Cause of Deviation: | |
| Response Steps Taken: | |

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

Part 70 Significant Source Modification Permit - Quarterly Report

Source Name: MasterBrand Cabinets, Inc.
Source Address: 614 West Third Street, Ferdinand, IN 47532
Mailing Address: 614 West Third Street, Ferdinand, IN 47532
Permit No.: 037-13893-00051
Facility: Electrostatic Finishing Line
Parameter: VOC usage for the Stain, Sealer, Topcoat Toner and Touchup booths
Limits: (a) 381 tons per 12 consecutive month period with compliance demonstrated at the end of each month for the Stain, Sealer and Topcoat booths
(b) 119 tons per 12 consecutive month period with compliance demonstrated at the end of each month for the Toner and Touchup booths

Quarter: _____ YEAR: _____

| Month | Column 1 | | Column 2 | | Column 1 + Column 2 | |
|---------|----------------------------------|--------------------------|----------------------------------|--------------------------|----------------------------------|--------------------------|
| | This Month | | Previous 11 Months | | 12 Month Total | |
| | Stain, Sealer and Topcoat booths | Toner and Touchup booths | Stain, Sealer and Topcoat booths | Toner and Touchup booths | Stain, Sealer and Topcoat booths | Toner and Touchup booths |
| Month 1 | | | | | | |
| Month 2 | | | | | | |
| Month 3 | | | | | | |

- ☐ No deviation occurred in this quarter.
- ☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

**PART 70 SOURCE MODIFICATION OPERATING PERMIT
Semi-Annual Report
VOC and VHAP usage - Wood Furniture NESHAP**

Source Name: MasterBrand Cabinets, Inc.
Source Address: 614 West Third Street, Ferdinand, IN 47532
Mailing Address: 614 West Third Street, Ferdinand, IN 47532
Permit No.: 037-13893-00051
Facility: Electrostatic Finishing Line
Parameter: VOC and VHAPs - NESHAP
Limit: (1) Finishing operations - 1.0 lb VHAP/lb Solids
(2) Thinners used for on-site formulation of washcoats, basecoats and enamels - 3% VHAP content by weight
(3) All other thinner mixtures - 10% VHAP content by weight
(4) Foam adhesives meeting the upholstered seating flammability requirements - 1.8 lb VHAP/lb Solids
(5) All other contact adhesives - 1.0 lb VHAP/lb Solids
(6) Strippable spray booth material - 0.8 pounds VOC per pound solids

YEAR: _____

| Month | Finishing Operations (lb VHAP/lb Solid) | Thinners used for on-site formulation (% by weight) | All other thinner mixtures (% by weight) | Foam adhesives (upholstered) (lb VHAP/lb Solid) | Contact adhesives (lb VHAP/lb Solid) | Strippable spray booth material (lb VOC/lb Solid) |
|-------|--|--|---|--|---|--|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |

- ☐ No deviation occurred in this six month period.
☐ Deviation/s occurred in this six month period.

Deviation has been reported on: _____

Submitted by: _____
Title/Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section
Office Of Air Quality
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

MasterBrand Cabinets, Inc.
614 West Third Street,
Ferdinand, IN 47532

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make
these representations on behalf of _____.
(Company Name)
4. I hereby certify that MasterBrand Cabinets, Inc. 614 West Third Street, Ferdinand, IN 47532, has constructed the equipment in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on December 10, 1999 and as permitted pursuant to **Source Modification No. 037-13893-00051** issued on _____.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana
on this _____ day of _____, 20 _____.

My Commission expires: _____

Signature

Name (typed or printed)

**Indiana Department of Environmental Management
Office of Air Quality**

**Addendum to the
Technical Support Document for a Part 70 Significant Source Modification and
Prevention of Significant Deterioration Review**

Source Background and Description

| | |
|--------------------------------------|--|
| Source Name: | MasterBrand Cabinets, Inc. -Plants 4/22 |
| Source Location: | 614 West Third Street, Ferdinand, IN 47532 |
| County: | Dubois |
| SIC Code: | 2434 |
| Operation Permit No.: | 037-5930-00051 |
| Operation Permit Issuance Date: | Not Yet Issued |
| Significant Source Modification No.: | 037-13893-00051 |
| Permit Reviewers: | Gurinder Saini |

On November 27, 2002, the Office of Air Quality (OAQ) had a notice published in the Herald, Jasper, Indiana, stating that MasterBrand Cabinets, Inc., had applied for an approval for construction and operation of an electrostatic finishing line. The public notice also stated that the IDEM, OAQ proposed to issue the Significant Source Modification for this operation and provided information on how the public could review the proposed approval and other documentation. Finally, the notice informed interested parties that there was a period until December 27, 2002 to provide comments on the draft permit.

Comments received from MasterBrand Cabinets, Inc.

Written comments were received from Mr. Jim Weitkamp of MasterBrand Cabinets, Inc., on December 20, 2002. These comments and IDEM, OAQ responses, including changes to the permit (where language deleted is shown with ~~strikeout~~ and that added is shown in **bold**) are as follows:

Comment 1:

We request that the technical contact be changed from Mr. Larry Hilgeman to Mr. Willard Robertson, Environmental Manager. All future correspondence should be directed to the attention of Mr. Robertson at One MasterBrand Cabinets Drive, P.O. Box 420, Jasper, Indiana 47546. In addition, the permit should identify the Vice President, Stock Operations as the Responsible Official.

Response 1:

The technical contact in the IDEM, OAQ database has been changed to Willard Robertson, Environmental Manager. The permit correctly identifies the "Vice President, Stock Operations" as the responsible official. The mailing address in the permit is changed as per the above comment.

Comment 2:

Draft Permit: Section A.2, Emission Units and Pollution Control Equipment Summary, & Section D.1, Facility Description The natural gas-fired curing oven and the natural-gas fired regenerative thermal oxidizer are not specifically regulated insignificant activities and should not be listed in Section A.3. We request that the thermal oxidizer be identified as the control device for the

specific units on the electrostatic finishing line and that the descriptions be revised as follows:

One electrostatic finishing line consisting of the following emission units:

1. One (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.
2. The following equipment, all of which is controlled by one (1) natural gas-fired regenerative thermal oxidizer with a maximum heat input rate of 7.9 MMBtu per hour:
 - (a) two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls,
 - (b) two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls, and
 - (c) two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls.
3. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter S3 as control, and exhausting to Stack S3.
4. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter TC3 as control, and exhausting to Stack TC3.
5. one (1) natural gas-fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.

Draft Permit: Section A.3, Specifically Regulated Insignificant Activities. By incorporating the Thermal Oxidizer and the curing oven into the descriptions of the overall line as recommended in the previous comment, there is no need to include any equipment under this section of the permit. As such, we recommend that section A.3 be deleted.

Draft Permit: Sections A.2, D.1 and Condition D.1.8, Regenerative Thermal Oxidizer. The maximum heat input rate of the regenerative thermal oxidizer should be changed to 7.9 MMBtu per hour (the proposed permit lists the heat input as 1.16 MMBtu per hour). We recently made the final selection of the control equipment and chose an oxidizer with an afterburner that can heat up more quickly in start-up mode. Operationally, this unit is the same as what we originally proposed and the control efficiencies will not change. The maximum heat input of the oxidizer should be changed throughout the permit.

Response 2:

The conditions A.2, A.3, A.4 and box with equipment description in Section D.1 are changed as follows:

~~A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]~~

~~This modification to a stationary source is approved to construct and operate the following emission units and pollution control devices:~~

~~One electrostatic finishing line consisting of following emission units:~~

1. ~~one (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.~~
2. ~~two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks ST1 and ST2 respectively.~~
3. ~~two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks S1 and S2 respectively.~~
4. ~~two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks TC1 and TC2.~~
5. ~~one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter S3 as control, and exhausting to Stack S3.~~
6. ~~one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter TC3 as control, and exhausting to Stack TC3.~~

A.3 ~~Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]~~

~~This modification to a stationary source also includes the following insignificant activities, which are specifically regulated, as defined in 326 IAC 2-7-1(21):~~

1. ~~one (1) natural gas fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.~~
2. ~~one (1) natural gas fired regenerative thermal oxidizer with a maximum heat input rate of 1.16 MMBtu per hour, controlling VOC emissions from stain, sealer and top coat booths.~~

A.2 ~~Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]~~

~~This modification to a stationary source is approved to construct and operate the following emission units and pollution control devices:~~

~~One electrostatic finishing line consisting of the following emission units:~~

1. ~~One (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.~~
2. ~~The following equipment, all of which is controlled by one (1) natural gas-fired regenerative thermal oxidizer with a maximum heat input rate of 7.9 MMBtu per hour:~~
 - (a) ~~two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls,~~
 - (b) ~~two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of~~

766 units per hour, using dry filters as particulate controls, and

- (c) two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls.**
- 3. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter as control, and exhausting to Stack S3.**
- 4. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter as control, and exhausting to Stack TC3.**
- 5. one (1) natural gas-fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.**

A.43 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

~~One electrostatic finishing line consisting of following emission units:~~

- ~~1. one (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.~~
- ~~2. two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks ST1 and ST2 respectively.~~
- ~~3. two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks S1 and S2 respectively.~~
- ~~4. two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks TC1 and TC2.~~
- ~~5. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter S3 as control, and exhausting to Stack S3.~~
- ~~6. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter TC3 as control, and exhausting to Stack TC3.~~
- ~~7. one (1) natural gas fired regenerative thermal oxidizer with a maximum heat input rate of 1.16 MMBtu per hour, controlling VOC emissions from stain, sealer and top coat booths.~~

One electrostatic finishing line consisting of the following emission units:

- 1. One (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum**

- capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.**
- 2. The following equipment, all of which is controlled by one (1) natural gas-fired regenerative thermal oxidizer with a maximum heat input rate of 7.9 MMBtu per hour:**
- (a) two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls,**
 - (b) two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls, and**
 - (c) two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as particulate controls.**
- 3. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter as control, and exhausting to Stack S3.**
- 4. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter as control, and exhausting to Stack TC3.**
- 5. one (1) natural gas-fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.**

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Comment 3:

Draft Permit: Conditions D.1.2(a)(i) and D.1.2(c), Volatile Organic Compound – Transition Period.
The text in these permit conditions uses the word “effectiveness” where “effective” should be used. We request that the wording in these conditions be changed.

Response 3:

The condition D.1.2 is modified as follows:

D.1.2 Volatile Organic Compound – Transition period BACT [326 IAC 2-2-3] [326 IAC 8-1-6]

- (a) During the period from the effective date of the permit to the date of commencement of operation of the RTO to control VOC emissions from the stain, sealer and topcoat booths, the input of VOC to the stain, sealer and topcoat booths shall not exceed 381 tons per year. Depending upon the length of time between permit effectiveness date and the commencement of operation of the RTO date, this limit shall be implemented as follows:**
 - (i) for the period of the first quarter (period of three calendar months) from the effectiveness date of the permit, the input of VOC to the stain, sealer and topcoat booths shall not exceed 95.25 tons per quarter.**
 - (ii) for the subsequent months up to the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that the total usage divided by the accumulated months of operation from the date of effectiveness of the permit shall not exceed 31.75 tons per month.**

- (b) During the time period from the date of commencement of operation of the RTO up to 12 months of operation, the input of VOC to the stain, sealer and topcoat booths shall be limited, such that in conjunction with the operation of the RTO the VOC emissions shall not exceed 200 tons per year. This limit shall be implemented as follows:
 - (i) for the period of the first quarter (period of three calendar months) from the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that in conjunction with the operation of the RTO, the VOC emissions shall not exceed 50 tons per quarter.
 - (ii) for the subsequent months up to 12 months from the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that in conjunction with the operation of the RTO, the total VOC emissions divided by the accumulated months of operation from the date of commencement of operation of the RTO shall not exceed 16.67 tons per month.
- (c) During the first twelve (12) months of operation after the effective date of the permit, except for the first quarter (period of three calendar months) from the effective date of the permit, the input of VOC shall be limited such that the total usage divided by the accumulated months of operation shall not exceed 9.9 tons per month for the toner and touchup booths. For the period of the first quarter from the effectiveness date of the permit, the input of VOC to the toner and touchup booths shall be limited to no greater than 29.7 tons.

Comment 4:

Draft Permit: Condition D.1.4(b)(1)(B) Wood Furniture Manufacturing Operations NESHAP. This condition lists the VHAP limits found in 40 CFR 63 Subpart JJ. This requirement is split into two separate sections in this condition. We request that the condition be combined as follows: "Use compliant finishing materials in which all stains, washcoats, sealers, topcoats, basecoats and enamels have maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied."

Response 4:

The condition D.1.4 is modified as follows:

D.1.4 Wood Furniture Manufacturing Operations NESHAP [40 CFR Part 63, Subpart JJ]

- (a) The wood furniture coating operations are subject to 40 CFR Part 63, Subpart JJ, which is incorporated by reference as 326 IAC 20-1, and shall be in compliance upon startup. A copy of the rule is attached.
- (b) Pursuant to 40 CFR 63, Subpart JJ, the wood furniture coating operations shall comply with the following conditions:
 - (1) Limit the Volatile Hazardous Air Pollutants (VHAP) emissions from operations as follows:
 - (A) Achieve a weighted average volatile hazardous air pollutant (VHAP) content across all coatings of one (1.0) pound VHAP per pound solids; or
 - (B) ~~Use compliant finishing materials in which all stains have a maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied.~~

Use compliant finishing materials in which all **stains**, washcoats, sealers,

topcoats, basecoats and enamels have a maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied. Thinners used for on-site formulation of washcoats, basecoats, and enamels have a three percent (3.0%) maximum VHAP content by weight. All other thinners have a ten percent (10.0%) maximum VHAP content by weight; or

- (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids; or
 - (D) Use a combination of (A), (B), and (C).
- (2) Limit VHAP emissions contact adhesives as follows:
- (A) For foam adhesives used in products that meet the upholstered seating flammability requirements, the VHAP content shall not exceed one and eight-tenths (1.8) pound VHAP per pound solids.
 - (B) For all other contact adhesives (except aerosols and contact adhesives applied to nonporous substrates) the VHAP content shall not exceed one (1) pound VHAP per pound solids.
 - (C) Use a control device to limit emissions to one (1) pound VHAP per pound solids.
- (3) The strippable spray booth material shall have a maximum VOC content of eight-tenths (0.8) pounds VOC per pound solids.

Comment 5:

Draft Permit: Condition D.1.11, Volatile Organic Compounds (VOC). The first sentence of this condition should be amended to read: *“Compliance with condition D.1.1 and D.1.2 shall be demonstrated...”*. Both of these conditions require that similar compliance demonstrations be made and therefore it is appropriate to reference both conditions. In addition we would request that the last sentence of the first paragraph be amended to read as follows: *“The VOC emissions for a month, as required by conditions D.1.1(2)(a) and D.1.2(b), can be arrived at using the following equation for VOC usage.”* The equation provided for in this condition is appropriate where a control device is required for compliance, and the specific conditions we are suggesting be referenced are the conditions which are based on the use of a control device.

Response 5:

The condition D.1.11 is modified as follows:

D.1.11 Volatile Organic Compounds (VOC)

Compliance with Condition D.1.1 **and D.1.2** shall be demonstrated at the end of each month. This shall be based on the total volatile organic compound emitted for the previous month, and adding it to previous 11 months total VOC emitted so as to arrive at VOC emission for 12 consecutive months period. The VOC emissions for a month, **as required by conditions D.1.1 (2)(a) and D.1.2 (b)** can be arrived at using the following equation for VOC usage:

$$\text{VOC (tons) emitted} = [(\text{VOC (tons) input}) \times (100 - \% \text{control efficiency of the regenerative thermal oxidizer})] + [\text{uncontrolled VOC (tons) input}]$$

Where VOC input is based on the formulation data supplied by the coating manufacturer. IDEM,

OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4. Control efficiency of the thermal oxidizer can be calculated by multiplying the capture efficiency with the destruction efficiency.

Comment 6:

Draft Permit: Condition D.1.13 Monitoring (Particulate). This condition requires daily inspections of the filter placement, weekly observations of the overspray and monthly inspections of the rooftops and nearby ground. As shown in the permit's Technical Support Document on page 3, the combined Potential to Emit (PTE) from the stain, sealer, and topcoat booths is 16.8 tons VOC per year or 3.71 pounds per hour for these six spray booths. Since the uncontrolled PTE is less than 10 pounds per hour for each booth, we request that this condition, and its associated record keeping requirements, be removed from the permit since monitoring is not warranted for such small sources of particulate matter.

Response 6:

The commentator refers to VOC in the above comment but discusses the aspects related PM/PM10 emissions. Therefore, IDEM, OAQ presumes that these comments refer to PM/PM10 and not VOC emissions. The TSD for this permit shows the uncontrolled potential to emit for the PM10 emission is 17.11 tons per year. This is greater than 15 tons per year the significance level for PM10 under 326 IAC 2-2 (PSD) rules. As explained in proposed modification section of the TSD, the Permittee proposes to use dry filters to control PM10 emissions below the significance level. Therefore, in accordance with the IDEM, OAQ guidance the Permittee is required to monitor the control device performance per condition D.1.13, where it controls the emissions in a way to avoid any applicable requirements. Therefore, no changes are required to any permit conditions.

Comment 7:

Draft Permit Condition D.1.14(a) and (c) Regenerative Thermal Oxidizer This condition states "A continuous monitoring system shall be calibrated, maintained, and operated on the RTO for measuring operating temperature." For clarification, we request the condition be changed to read as follows: "A monitoring system shall be calibrated, maintained, and operated on the RTO for measuring operating temperature when the electrostatic finishing line is operational."

Draft Permit: Condition D.1.14 Regenerative Thermal Oxidizer and Condition D.1.16(a)(6) Record Keeping Requirements Condition D.1.14 requires that the Permittee maintain the continuous operating temperature and the hourly average temperature. It is unnecessary to maintain both the continuous operating and hourly average temperatures, because adequate monitoring can be provided through the recording of the average hourly values, which would correspond to the same time period as the compliance test itself. This requirement is burdensome and may require the use of more than one data system. We request that this condition be changed such that the hourly average temperature is the only compliance monitoring determinant. The recordkeeping requirements of Condition D.1.16(a)(6) would need to be revised to reflect this change as well.

Response 7:

The condition D.1.14 presents the IDEM, OAQ's intent to require the operation of the RTO in a manner to show compliance with applicable regulations. The IDEM, OAQ has required the dual temperature monitoring approach. The Permittee is required to maintain hourly average temperature and minimum operating temperature equal to or greater than corresponding values observed during the compliant stack test.

The Permittee is allowed to vary the fuel input to the RTO that can reduce the operating temperature of the RTO lower than the average temperature of the RTO observed during the compliant stack test. This allows the Permittee flexibility to economize on fuel and still show

compliance on an hourly average basis.

The requirement to maintain minimum operating temperature ensures that under no circumstances the operating temperature in the RTO falls below the minimum operating temperature observed during the compliant stack test. This in turn ensures a minimum level of destruction in the RTO to show compliance with the applicable regulations.

As described in the comment and response 10 of this document, the RTO temperature in the condition D.1.14 was erroneously stated as 1450 °F. The correct value as stated in the TSD is 1350 °F. This change and other changes recommended by the commentator in condition D.1.14 are shown below:

D.1.14 Regenerative Thermal Oxidizer

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO for measuring operating temperature **when the electrostatic finishing line is operational**. The output of this system shall be recorded as continuous and hourly average readings. From the date of commencement of operation of RTO until the approved stack test results are available, the Permittee shall operate the RTO at or above the hourly average temperature of 14350 °F.
- (b) The Permittee shall determine the hourly average temperature, minimum operating temperature and duct pressure/fan amperage for the RTO from the most recent valid stack test that demonstrates compliance with the limits and efficiencies in conditions D.1.1 and D.1.8, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee when operating the thermal oxidizer shall maintain
 - (i) the hourly average temperature at or above the hourly average temperature as observed during the compliant stack test.
 - (ii) the continuous operating temperature at or above the minimum operating temperature as observed during the compliant stack test.
 - (iii) The duct pressure/fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

Therefore, no additional changes are required to any permit conditions.

Comment 8:

Draft Permit: Condition D.1.17(e) Reporting Requirements For clarification, we request that this condition be changed as follows: "For use of the regenerative thermal oxidizer to comply **with 40 CFR 63, Subpart JJ**, the excess emissions and continuous monitoring system performance report and summary report required in 40 CFR 63.807(d)."

Response 8:

The condition D.1.17 of the permit is revised as follows:

D.1.17 Reporting Requirements

- (a) The Permittee shall submit monthly reports from the date of effectiveness of this permit till the end of the month after commencement of operation of the RTO about the status and

progress of the RTO installation. These reports shall be submitted to the address listed in Section – C General Reporting Requirements of this permit and does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

- (b) A quarterly summary of the information to document compliance with Condition D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).
- (c) An Initial Compliance Report to document compliance with Condition D.1.4 and the Certification form shall be submitted within sixty (60) days following startup. The Initial Compliance Report must include data from the entire month that the compliance date falls.
- (d) Pursuant to 40 CFR 63, Subpart JJ, a semi-annual Continuous Compliance Report to document compliance with Condition D.1.4 and the Certification form, shall be submitted within thirty (30) days after the end of the six (6) months being reported.
 - (1) For the first year following the compliance date, the six (6) month period shall begin on the first day of the month after which the operation commences.
 - (2) Following the first year of reporting, the semi-annual Continuous Compliance Report shall be submitted on a calendar year basis with the reporting periods ending June 30 and December 31.
- (e) For use of the regenerative thermal oxidizer to comply **with the 40 CFR 63 Subpart JJ**, the excess emissions and continuous monitoring system performance report and summary report required in 40 CFR 63.807(d).
- (f) The reports required in (b) and (c) of this condition shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Comment 9:

Technical Support Document (TSD) Page 2 of 18, History. The History Section states “... that the Source consists of an unpermitted electrostatic finishing line. This line has potential to emit greater than 250 tons per year, and therefore is required to undergo PSD review.” The first sentence is factually incorrect and should be removed since the facility was previously issued a permit for this line. As to the second sentence, MasterBrand Cabinets does not agree with IDEM’s assertion that the line is required to undergo PSD review.

Technical Support Document (TSD) Page 2 of 18, Enforcement Issue. We request that (a) be removed because it is factually incorrect. We do not agree that equipment has been constructed

or operated prior to receipt of a proper permit. As stated above, the facility was issued a permit for this line. If IDEM will not remove this sentence in its entirety, we request that the wording at least be changed from "IDEM is aware..." to "IDEM asserts...". We also request that (b) be removed since the pending Notice of Violation is not relevant to issuance of this permit.

General Comment to the comment notice document, the draft permit and the TSD. MBCI disputes any and all statements or conclusions made by IDEM in any document or otherwise, including the public comment notice document, the draft permit and the TSD, regarding the applicability of the PSD regulations to the Ferdinand plant, including, without limitation, the alleged major modification of the plant's electrostatic line. MBCI reserves all of its rights and defenses with regard to the applicability of PSD, and any of the underlying technical assessments, to the Ferdinand plant.

Response 9:

The IDEM, OAQ has established in the TSD and this permit that the modification at MasterBrand Cabinets, Inc. is a 'Major Modification' under 326 IAC 2-2 Prevention of Significant Deterioration rules. This matter is presently being reviewed and investigated by the Office of Enforcement at IDEM. The IDEM, OAQ does not make changes to the TSD after public notice as it forms the basis for draft permit as presented for public comment. Any changes in the TSD are acknowledged in the TSD addendum. No changes are made to any permit conditions.

Comment 10:

Technical Support Document (TSD) Page 18 of 18, Compliance Requirements Item (c) of this section states that a minimum operating temperature of 1350°F be maintained. This is inconsistent with permit Condition D.1.14(a) which lists the minimum operating temperature as 1450°F. Additionally, item (c) of this section states that the duct pressure or fan amperage should be observed at least once per week when the RTO is in operation whereas Condition D.1.14 (c)(iii) requires that the duct pressure/fan amperage be observed once per day. We request that the minimum operating temperature in the permit be modified to 1350°F consistent with the TSD and that the TSD be modified to be consistent with the fan/amperage monitoring requirements of the permit.

Response 10:

The permit condition D.1.14 has been revised to reflect the RTO operating temperature of 1350°F. The IDEM, OAQ does not make changes to the TSD as it forms the basis for draft permit as presented for public comment. Any changes in the TSD are acknowledged in the TSD addendum. As stated in the permit condition D.1.14 the duct pressure or fan amperage parameter is to be observed once a day. The TSD erroneously stated this to be once per week. No changes are required to any permit conditions.

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a Part 70 Significant Source Modification
and Prevention of Significant Deterioration Review**

Source Background and Description

| | |
|--------------------------------------|--|
| Source Name: | MasterBrand Cabinets, Inc. -Plants 4/22 |
| Source Location: | 614 West Third Street, Ferdinand, IN 47532 |
| County: | Dubois |
| SIC Code: | 2434 |
| Operation Permit No.: | 037-5930-00051 |
| Operation Permit Issuance Date: | Not Yet Issued |
| Significant Source Modification No.: | 037-13893-00051 |
| Permit Reviewers: | Gurinder Saini |

The Office of Air Quality (OAQ) has reviewed a modification application from MasterBrand Cabinets, Inc. – Plants 4/22 (formerly Aristokraft, Inc. – this name change is acknowledged in this review), relating to the construction of the following emission units and pollution control devices:

One electrostatic finishing line consisting of following emission units:

1. one (1) toner spray booth, identified as TB-2, constructed in 1985, with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks T1 and T2.
2. two (2) stain spray booths, using electrostatic spray applicators, identified as STB-3 and STB-4, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks ST1 and ST2 respectively.
3. two (2) sealer spray booths, using electrostatic spray applicators, identified as SB-7 and SB-8, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks S1 and S2 respectively.
4. two (2) topcoat spray booths, using electrostatic spray applicators, identified as TCB-9 and TCB-10, constructed in 1985, each with a maximum capacity of 766 units per hour, using dry filters as controls, and exhausting to stacks TC1 and TC2.
5. one (1) sealer touch-up spray booth, identified as SB-6, constructed in 1989 using dry filter S3 as control, and exhausting to StackS3.
6. one (1) top coat touch-up spray booth, identified as TCB-18, constructed in 1993 using dry filter TC3 as control, and exhausting to StackTC3.
7. one (1) natural gas fired curing oven, identified as Ou5, with a maximum heat input rate of 2.0 MMBtu per hour, and exhausting to stack O2 & O3.
8. one (1) natural gas fired regenerative thermal oxidizer with a maximum heat input rate of 1.16 MMBtu per hour, controlling VOC emissions from stain, sealer and top coat booths.

The responsible official is changed from Larry Hilgeman to the Vice President Stock Operations, to be consistent with IDEM policy to not add the name in the permit, but rather keep the title only

to avoid amendments every time the responsible official changes.

History

During the Part 70 Operating Permit application review, the IDEM, OAQ determined that the Source consists of an unpermitted electrostatic finishing line. This line has potential to emit greater than 250 tons per year and therefore is required to undergo PSD review. On December 10, 1999, the MasterBrands Cabinets, Inc. responded to a Notice of Deficiency by IDEM, OAQ, and submitted a Best Available Control Technology (BACT) analysis for the electrostatic line. The IDEM, OAQ assigned a separate permit number 037-13893-00051 on February 09, 2001, to this part of the application for the Prevention of Significant Deterioration (PSD) review. MasterBrand Cabinets, Inc. has applied for a Part 70 permit on May 24, 1996.

The electrostatic line was built in 1985 and is used to apply toner, stain, sealer and top coat to the wooden cabinets.

Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit.
- (b) The source has enforcement actions pending for this modification. The NOV for this action, Case No. 2001-11045-A was issued on April 22, 2002.

Stack Summary

| Stack ID | Height (ft) | Diameter (ft) | Flow Rate (acfm) | Temperature (deg. F) |
|----------|-------------|---------------|------------------|----------------------|
| T1 | 30'6" | 2'6" | 8,330 | Ambient |
| T2 | 29' | 2'6" | 6,713 | Ambient |
| ST1 | 27' | 2 | 4,531 | Ambient |
| ST2 | 27' | 2 | 4,763 | Ambient |
| S1 | 26'6" | 2 | 5,335 | Ambient |
| S2 | 26'6" | 2 | 4,669 | Ambient |
| TC1 | 26' | 2 | 4,042 | Ambient |
| TC2 | 32' | 2 | 5,407 | Ambient |
| S3 | 27' | 2 | 4,550 | Ambient |
| TC3 | 29' | 2 | 10,990 | Ambient |

Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 10, 1999. Additional information was received on April 23, 2002, May 22, 2002 and July 12, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Potential To Emit of the Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

This table reflects the PTE before controls from all the emission units listed on page 1 of this TSD. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| Pollutant | Potential To Emit (tons/year) |
|-----------------|-------------------------------|
| PM | 16.83 |
| PM-10 | 17.11 |
| SO ₂ | - |
| VOC | 2646.69 |
| CO | 1.4 |
| NO _x | 1.2 |

| HAPs | Potential To Emit (tons/year) |
|---------------------|-------------------------------|
| Single HAP | >10 |
| Combination of HAPs | >25 |

Assuming all PM10 to be equal to PM.

Justification for Modification

This change is being approved through a Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5 (f)(4)(D) and (f)(1) because the PTE of VOC is greater than 25 tons per year and this is a major modification under 326 IAC 2-2 (Prevention of Significant Deterioration).

County Attainment Status

The source is located in Dubois County.

| Pollutant | Status |
|-----------------|------------|
| PM-10 | Attainment |
| SO ₂ | Attainment |
| NO ₂ | Attainment |
| Ozone | Attainment |
| CO | Attainment |
| Lead | Attainment |

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Dubois County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Dubois County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

| Pollutant | Emissions (tons/year) |
|-----------------|-----------------------|
| PM-10 | 42 |
| SO ₂ | - |
| VOC | 440 |
| CO | 2 |
| NO _x | 2 |

- (a) This existing source is a major stationary source for PSD because an attainment regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the 28 listed source categories.
- (b) The information in the above table is based on the emissions statement submitted by this source for the year 2000.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

| Pollutant | PM (ton/yr) | PM10 (ton/yr) | SO ₂ (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NO _x (ton/yr) |
|-----------------------|-------------|---------------|--------------------------|--------------|-------------|--------------------------|
| Proposed Modification | 0.16 | 1.04 | - | 319 | 1.4 | 1.2 |
| Net Emissions | 0.16 | 1.04 | - | 319 | 1.4 | 1.2 |
| PSD Threshold | 250 | 250 | 250 | 250 | 250 | 250 |
| Significance level | 25 | 15 | 40 | 40 | 100 | 40 |

- (a) This modification is major for Prevention of Significant Deterioration Review, because the limited and controlled potential to emit for the VOC is greater than 250 tons per year. The PM and PM10 emissions from the surface coating booths are controlled using dry filters.
- (b) The VOC emissions from the proposed modification are limited as follows:
 - 1. the Permittee has accepted that the VOC usage in the toner and touchup booths shall be limited to **119** tons per year.
 - 2. the Permittee has accepted that the VOC usage in the stain sealer and topcoat booths shall be limited such that the VOC emissions from the thermal oxidizer shall not exceed 200 tons per year.
 - i. The Regenerative Thermal Oxidizer (RTO), (add-on control equipment) shall have at least 50% capture efficiency. Based on the PTE, the VOC usage of 381 tons per year for the stain, sealer and topcoat booths at least **190.5** tons per year of VOC emitted will be routed to the add-on control and another 190.5 tons per year will be emitted uncontrolled.
 - ii. The RTO shall maintain a destruction efficiency of at least 95%.

Therefore, the VOC emissions from the RTO exhaust shall be less than **9.5 tons per year**.

The VOC emissions are calculated as follows:

VOC captured by RTO = Capture efficiency X VOC usage

= 50% X 381 tons per year

= 190.5 tons per year

VOC emitted from RTO = (100-Destruction Efficiency) X VOC captured by RTO

= (100-95)% X 190.5

= 9.5 tons per year

3. Therefore, the total limited and controlled potential to emit for VOC from the electrostatic line shall be:

For the stain sealer and top coat booths

VOC = **190.5 + 9.5 = 200** tons per year

For the toner and touchup booths

VOC = **119** tons per year

Total VOC emissions = **200 + 119 = 319.0** tons per year.

- (c) The applicant has identified two stages to achieve compliance with the permit requirements to install the RTO to control VOC emissions and achieve compliance with the limit in item (b) above. The applicant has contacted various vendors for the RTO and has estimated a period of up to 270 days to complete the installation and start operation of RTO to control VOC emissions from the stain, sealer and topcoat booths. The two stages are discussed as follows:
- (i) *time period from the effectiveness date of permit to the date of operation of RTO.*
There will be a period of time from the effectiveness date of the permit to the date of commencement of operation of the RTO to control VOC emissions from the stain, sealer and topcoat booths. During this period the Permittee has agreed to limit the input of VOC to the stain, sealer and topcoat booths to less than 381 tons per year. Depending upon the length of time between permit effectiveness date and the commencement of operation of the RTO date, this limit shall be implemented as follows:
1. for the period of the first quarter from the effectiveness date of the permit, the input of VOC to the stain, sealer and topcoat booths shall be limited to no greater than 95.25 tons.
 2. for the subsequent months up to the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that the total usage divided by the accumulated months of operation from the date of effectiveness of the permit shall not exceed 31.75 tons per month.
- (ii) *time period from the date of operation of RTO to first 12 months of operation.*
During this period, per item (b) the Permittee has agreed to limit the input of VOC

to the stain, sealer and topcoat booths, such that the VOC emissions shall be no greater than 200 tons per year. This limit shall be implemented as follows:

1. for the period of the first quarter from the date of commencement of operation of the RTO, the input of VOC to the stain, sealer and topcoat booths shall be limited such that the VOC emissions shall be no greater than 50 tons assuming a capture efficiency of 50% and destruction efficiency of 95%.
2. for the subsequent months up to the date of 12 months of operation from the commencement of operation of the RTO, the input of VOC stain, sealer and topcoat booths shall be limited such that the total VOC emissions divided by the accumulated months of operation from the date of commence operation of the RTO shall not exceed 16.67 tons per month assuming a capture efficiency of 50% and destruction efficiency of 95%.

Transition limitations

The following table illustrates the transition conditions for the electrostatic line detailed above:

For Stain, Sealer and Topcoat booths

| Start of the time period | End of the time period | Limit |
|--|--|---|
| Date of effectiveness of this permit | 3 months (1 st quarter) after the date of effectiveness of this permit | VOC usage limited to 95.25 tons per quarter |
| Date of end of 1 st quarter after the date of effectiveness of this permit | Up to the date of commencement of operation of the RTO, in no case later than 180 days after effectiveness date of this permit | Limit VOC usage such that the total usage divided by the accumulated months of operation from the date of effectiveness of the permit shall not exceed 31.75 tons per month |
| | | The above items limit the VOC usage from the Stain, Sealer and Topcoat booths such that the annual VOC usage for these booths is less than 381 tons per year. |
| Date of commence operation of the RTO | 3 months (1 st quarter) after the date of commencement of operation of the RTO | VOC emissions limited to 50 tons per quarter |
| Date of end of 1 st quarter after the date of commence operation of the RTO | Up to the date of end of 12 month period after the date of commencement of operation of the RTO | Limit VOC usage such that the total usage divided by the accumulated months of operation from the date of effectiveness of the permit shall not exceed 16.67 tons per month |
| | | The above items limit the VOC usage from the Stain, Sealer and Topcoat booths such that the annual VOC emissions for these booths is less than 200 tons per year. |

For Toner and Touchup booths

| Start of the time period | End of the time period | Limit |
|---|---|---|
| Date of effectiveness of this permit | 3 months (1 st quarter) after the date of effectiveness of this permit | VOC usage limited to 29.7 tons per quarter |
| Date of end of 1 st quarter after the date of effectiveness of this permit | Up to the date of end of 12 month period after the date of effectiveness of this permit | Limit VOC usage such that the total usage divided by the accumulated months of operation from the date of effectiveness of the permit shall not exceed 9.9 tons per month |
| | | The above items limit the VOC usage from the Toner and Touchup booths such that the annual VOC usage for these booths is less than 119 tons per year. |

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T 037-5930-00051) application on May 24, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) The existing coating operations are subject to the National Emission Standards for Hazardous Air Pollutants, 326 IAC 14, 40 CFR 63, Subpart JJ (National Emission Standards for Wood Furniture Manufacturing Operations) because the source participates in the manufacture of wood furniture (SIC: 2434) as defined in the rule and the source is major for HAPs. The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart JJ.

Pursuant to 40 CFR 63 Subpart JJ, the wood cabinet coating operations shall comply with the following conditions:

- (1) Limit the Volatile Hazardous Air Pollutants (VHAP) emissions from electrostatic finishing line operations as follows:
 - (A) Achieve a weighted average volatile hazardous air pollutant (VHAP) content across all coatings of one (1.0) pound VHAP per pound solids; or
 - (B) Use compliant finishing materials in which all stains have a maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied.

Use compliant finishing materials in which all washcoats, sealers, topcoats, basecoats and enamels have a maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied. Thinners used for on-site formulation of washcoats, basecoats, and enamels have a three percent (3.0%) maximum VHAP content by weight. All other thinners have a ten percent (10.0%) maximum VHAP content by weight; or
 - (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids; or
 - (D) Use a combination of (A), (B), and (C).
- (2) Limit VHAP emissions contact adhesives as follows:
 - (A) For foam adhesives used in products that meet the upholstered seating flammability requirements, the VHAP content shall not exceed one and eight-tenths (1.8) pound VHAP per pound solids.
 - (B) For all other contact adhesives (except aerosols and contact adhesives applied to nonporous substrates) the VHAP content shall not exceed one (1) pound VHAP per pound solids.
 - (C) Use a control device to limit emissions to one (1) pound VHAP per pound

solids.

- (3) The strippable spray booth material shall have a maximum VOC content of eight-tenths (0.8) pounds VOC per pound solids.
- (4) The owner or operator of an affected source subject to this subpart shall prepare and maintain a written work practice implementation plan within sixty (60) calendar days after the compliance date. The work practice implementation plan must define environmentally desirable work practices for each wood furniture manufacturing operation and at a minimum address each of the following work practice standards as defined under 40 CFR 63.803:
 - (A) Operator training course.
 - (B) Leak inspection and maintenance plan.
 - (C) Cleaning and washoff solvent accounting system.
 - (D) Chemical composition of cleaning and washoff solvents.
 - (E) Spray booth cleaning.
 - (F) Storage requirements.
 - (G) Conventional air spray guns shall only be used under the circumstances defined under 40 CFR 63.803(h).
 - (H) Line cleaning.
 - (I) Gun cleaning.
 - (J) Washoff operations.
 - (K) Formulation assessment plan for finishing operations.

The source will comply with 40 CFR Part 63, Subpart JJ by a combination of weighted averages.

State Rule Applicability

326 IAC 1-6-3 (Preventive Maintenance):

- (a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after commencement of operation, including the following information on each:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM and OAQ upon request and shall be subject to review and approval by IDEM and OAQ.

326 IAC 1-7 (Stack Height Provisions):

Stacks for the electrostatic line are not subject to the requirements of 326 IAC 1-7 (Stack Height Provisions) because the potential emissions, which exhaust through the above-mentioned stack, are less than 25 tons per year of PM and SO₂.

326 IAC 2-4.1-1 (HAPs Major Source: New Source Toxics Rule)

The New Source Toxics Control rule requires any new or reconstructed major source of hazardous air pollutants (HAPs) for which there are no applicable NESHAP to implement maximum achievable control technology (MACT), determined on a case-by-case basis, when the potential to emit is greater than 10 tons per year of any single HAP. Information on emissions of the 187 hazardous air pollutants are listed in the OAQ Construction Permit Application, Form Y (set forth in the Clean Air Act Amendments of 1990). These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industry.

The HAPs emissions from the electrostatic line are subject to the requirements of 326 IAC 14, 40 CFR 63, Subpart JJ (National Emission Standards for Wood Furniture Manufacturing Operations). Therefore, these emissions are not subject to the requirements of this rule.

326 IAC 2-2-3 (Best Available Control Technology)

The electrostatic line is subject to the requirements of Best Available Control Technology (BACT) Analysis for Volatile Organic Compounds (VOCs) at the MasterBrand Cabinets, Inc. (MBCI) facility (formerly referred to as "Aristokraft, Inc.") in Ferdinand, Indiana.

The electrostatic line consists of one toner spray booth, two stain spray booths, two sealer spray booths, two topcoat spray booths, two touch-up spray booths, and oven. The stain, sealer and topcoat booths use electrostatic spray application. The line is considered a hang line, as opposed to a flat-line.

In order to identify all available VOC reduction methods and to evaluate the technical and economic feasibility of alternative control methods, this BACT Analysis has considered the following areas:

RACT/BACT/LAER Clearinghouse review

- VOC control technologies for surface coating of wood furniture

Evaluation of Material Substitution

- Ultraviolet curable coatings
- Waterborne coatings
- High-solids coatings

Evaluation of Add-On Control Technologies

- Regenerative Thermal Oxidizer

Evaluation of Improved Transfer Efficiency

- Air assisted airless spray application
- Electrostatic disc application

Evaluation of Work Practice Standards

- Work practice standards under MACT standard 40 CFR 63.803

BACT Determination

RBLC review

A search was made of the USEPA RACT/BACT/LAER Clearinghouse & State Regulatory Agencies. The technology reviews for similar sources, from the appropriate state agency permit files have been included in the search results. A summary of the search results is provided in the following table:

Information Search for the Electrostatic Line

| Facility Name / City | Process | Control Requirements | Basis | Issue Date |
|--|---|---|------------|------------|
| MasterBrand Cabinets, Inc. Kinston, NC | Surface Coating, Wood Furniture | <ul style="list-style-type: none"> High transfer efficiency application Work practice standards | BACT-PSD | 2001 |
| Arbek Manufacturing, Inc. Chino, CA | Surface Coating, Wood Furniture (Topcoat, Sealer, Stain Booths) | <ul style="list-style-type: none"> Super-low VOC coatings with reduction equivalent to an air pollution control system | BACT-PSD | 2000 |
| Steelcase Wood Furniture Grand Rapids, MI | Surface Coating, Wood Furniture, Flat Line | <p>Water-Based Stains:</p> <ul style="list-style-type: none"> Must be used on high volume line High efficiency applications 2.8 lb/gal less water limit <p>Solvent-Based Stains:</p> <ul style="list-style-type: none"> Can only be used on low volume line Company commitment to phase out solvent based stains High transfer efficiency HVLP applicators 6.95 lb/gal less water limit <p>Tiecoat & Washcoats:</p> <ul style="list-style-type: none"> Must be vented to RTO (80-85% capture, minimum 95% destruction) Booth and oven emissions reduced by control device <p>Wipe Stain:</p> <ul style="list-style-type: none"> Water-based automatic reciprocator spray HVLP on high volume line. Manual spray on low volume line <p>Tiecoat & Sealers:</p> <ul style="list-style-type: none"> VOC limit: 5.9 lb/gal HVLP spray application <p>Water-Based Topcoat:</p> <ul style="list-style-type: none"> VOC limit: 1.3 lb/gal HVLP spray application <p>UV Topcoats:</p> <ul style="list-style-type: none"> HVLP spray application VOC limit: 4.55 lb/gal | BACT-PSD | 2000 |
| | Surface Coating, Wood Furniture, Hang Line | <p>Tiecoat & Sealer:</p> <ul style="list-style-type: none"> Application by automatic electrostatic and manual HVLP RTO destruction greater than 95% VOC limit: 5.9 lb/gal <p>Topcoat:</p> <ul style="list-style-type: none"> Automatic electrostatic sprays <p>Solvent and Water-Based Stains:</p> <ul style="list-style-type: none"> Manual HVLP spray application | BACT-Other | 2000 |
| American Woodmark Gas City, IN | Wood Furniture Flat Spray Line | <ul style="list-style-type: none"> Thermal oxidation | Other | 1999 |
| Crystal Cabinet Works, Inc. Princeton, MN | Flat Line Spray Finishing Operations | <ul style="list-style-type: none"> High transfer efficiency spray application Solvent replacement/coatings reformulation | BACT-PSD | 1999 |
| Stanley Furniture Stanleytown, VA | Wood Household Furniture Manufacturing | <ul style="list-style-type: none"> Air assisted airless spray guns MACT work practice standards Water curtains | BACT-PSD | 1999 |
| Omega Cabinets Waterloo, IA | Spray Line Wood Furniture | <ul style="list-style-type: none"> High transfer efficiency 215 tpy VOC limit | BACT | 1998 |

| Facility Name / City | Process | Control Requirements | Basis | Issue Date |
|---|--|---|------------|------------|
| Guy Chaddock & Co. Bakersfield, CA | Coating Application | <ul style="list-style-type: none"> HVLP spray application | LAER | 1997 |
| Sandberg Furniture Co., Inc. Los Angeles, CA | Surface Coating Wood Furniture | <ul style="list-style-type: none"> Rollcoaters and UV cure section installed ahead of spray booth | LAER | 1997 |
| American Door Manufacturing Stockton, CA | Wood Products Coating Operation | <ul style="list-style-type: none"> HVLP or equivalent spray application and coatings with a VOC content of 0.68 lb/gal for water-based pigmented primers and 1.62 lb/gal for topcoats | LAER | 1996 |
| Creations in Wood, Inc. Fresno, CA | Wood Cabinet and Furniture Coating Booth | <ul style="list-style-type: none"> Coatings with VOC content of 4.6 lb/gal for clear topcoats, 3.2 lb/gal for high-solid coatings, 4.6 lb/gal for sanding sealers HVLP spray equipment | LAER | 1996 |
| Vaughan Furniture Company Stuart, VA | Surface Coating, Wood Furniture | <ul style="list-style-type: none"> Pollution prevention Airless spray nozzles | MACT | 1996 |
| Wellborn Cabinet, Inc. Ashland, AL | Surface Coating, Wood Cabinets | <ul style="list-style-type: none"> HVLP and air assisted airless application Flat sheet stock to use UV coating process VOC coating limits (lbs/gal): stain and toners = 7.2 (max), 6.8 (avg.); sealers = 7.2 (max), 5.7 (avg.); topcoats = 7.2 (max), 5.0 (avg) | BACT-PSD | 1995 |
| Paoli, Inc. Orleans, IN | Surface Coating, Wood Furniture | <ul style="list-style-type: none"> No feasible controls 445 tpy facility-wide VOC limit | BACT-PSD | 1995 |
| Thornwood Furniture Manufacturing, Inc. Phoenix, AZ | Surface Coating, Wood Furniture | <ul style="list-style-type: none"> High transfer efficiency Low VOC coatings | BACT-PSD | 1994 |
| Custom Woodcraft Paso Robles, CA | Wood coating operation in two downdraft booths | <ul style="list-style-type: none"> Low VOC waterborne wood coatings, clear topcoats limited to 2.29 lbs/gal; stain, sealers, and pigmented coatings limited to 2.0 lbs/gal | BACT-Other | 1994 |
| Dutailier Virginia, Inc. Martinsville, VA | Production & Touch-up Coating Booths | <ul style="list-style-type: none"> HVLP spray application | BACT | 1994 |
| Reubens Furniture, Inc. Phoenix, AZ | Surface Coating, Wood Furniture | <ul style="list-style-type: none"> VOC coating limits: 3.94 lbs/gal daily average and 2.75 lb/gal annual average | BACT-Other | 1993 |
| Eureka Manufacturing Co., Inc. Plymouth, MA | Wood and Metal Spray Operation | <ul style="list-style-type: none"> Low VOC coatings | RACT | 1992 |
| Schrock Handcrafted Cabinetry Arthur, IL | Surface Coating, Wood Cabinets | <ul style="list-style-type: none"> VOC coating limits: stain =6.6 lbs/gal; sealer, specialty topcoat and pigmented coatings = 5 lbs/gal; topcoat = 2.3 lbs/gal HVLP application for stain and sealer coatings | BACT-PSD | 1992 |

The results of the information search list fifteen facilities that were required to complete a BACT assessment. These analyses show a wide variability in the techniques used to control VOC emissions. Six facilities used low VOC or water-based coatings and two facilities installed add-on control technologies to control VOC emissions. For the remaining facilities, BACT was determined to be high transfer efficiency application, work practice standards, and/or VOC limits. The feasibility

of implementing these various options at the MBCI source is discussed in the following sections.

MATERIAL SUBSTITUTION

The volatile organic compounds (VOC) emissions can be controlled by eliminating the source of pollution. This approach is more environmentally friendly than using add-on controls. Material substitution has numerous advantages over other emission reduction technologies. Add-on control technologies can contribute to hazardous waste generation and secondary air quality impacts, whereas alternative coating technology does not. Therefore, the reduction of VOC emissions using alternative coatings is preferred.

Ultraviolet Curable Coatings

Ultraviolet radiation curable coatings are an alternative coating substitute developed to reduce VOC emissions. This technology uses diluent monomers to replace solvents that enable the coating to be applied to the substrate. The low molecular weight monomers react with the growing polymer chain and become part of the finished film, rather than evaporating as a solvent would. Photo initiators, acting as catalysts, are added and upon absorption of ultraviolet light, they separate to generate free radicals that start polymerization. Application of this technology has been limited to situations where the distance between the light source and the finish is kept constant. This can be accomplished for flat pieces but does not work effectively on detailed cabinet pieces. Therefore, the use of ultraviolet curable coatings has been technically infeasible. Recent developments in coating application technologies and ultraviolet light apparatus may make UV coatings a possible replacement to certain solvent based coatings. MBCI is currently conducting extensive research into developing ultraviolet radiation curable coatings for use in the cabinet industry.

Waterborne Coatings

Coatings for some applications have been reformulated by substituting water for the solvent used in the formulation. MBCI has evaluated the use of waterborne coatings in its toner and stain booths. It was determined during this evaluation that the water from the waterborne coatings penetrates into the wood fibers causing the fibers to swell. When a waterborne stain or toner is used (the initial coating applied to the bare wood surface), the fiber swelling causes the wood grain to raise and in some cases causes a discoloration of the wood. These effects result in a product of unacceptable quality. Therefore, the use of waterborne toners or stains is technically infeasible at the MBCI.

The use of waterborne sealers was determined to not be technically feasible for the same reasons as for waterborne stains and toners. Water from the waterborne sealer penetrates into the wood fibers causing the wood grain to raise resulting in a product of unacceptable quality.

In 2000, the MBCI evaluated the use of waterborne topcoats at the Ferdinand, IN facility. A complete report describing the evaluation was submitted to the Indiana Department of Environmental Management, Office of Air Quality in April 2001. At this stage of the finishing process, unless the surface is completely protected the wood fibers are still exposed to water from the water based topcoat, producing fiber swelling and grain raising, resulting in a product of unacceptable quality. The results of this evaluation suggest that the use of waterborne topcoats is technically infeasible at the MBCI.

While tests at MBCI concluded that water-based coatings were not technically feasible, other facilities are able to successfully use such coatings, depending upon application methods and the products being finished. MBCI uses an electrostatic spray line, which provides high transfer efficiency and thin film application of solvent based coating. This thin film does not provide complete protection of the wood fibers in the sealer step

precluding the use of water based topcoats. Furthermore, the electrostatic application is not as effective in water based coating applications due to the electrical conductivity of the coating. Additionally, MBCI's products are used in kitchens and bathrooms, and therefore the coatings must be chemical and water resistant. The water-based coatings do not always meet the specifications and performance requirements that are expected by the customers. Schrock Handcrafted Cabinetry is one of the facilities that uses water-based topcoats. Schrock is a semi-custom operation and coatings are applied by hand-spray method. The different application method allows Schrock to utilize a water based topcoat. American Door Manufacturing is another facility that uses water-based coatings. This facility coats doors which do not need to meet the same specifications required for kitchen and bathroom cabinets. Exterior doors can use a water-based coating since they do not have to meet such stringent performance requirements.

High-Solids Coatings

High-solids coatings have been evaluated for use in the wood furniture surface coating industry. These coatings typically result in a variation in film thickness on the final product. This difference in the thickness can be visible to the human eye, causing the product quality to be below the standards expected by the customer. Additionally, high-solids coatings cause runs and sags, resulting in a product of unacceptable quality. For these reasons, the use of high-solids coatings is not technically feasible.

ADD-ON CONTROL TECHNOLOGIES

The technical feasibility of available VOC control technologies was evaluated in addition to the review of material substitution. Add-on controls such as regenerative and recuperative thermal oxidation, catalytic incineration, flare, and carbon adsorption have been proven technically feasible for a number of surface coating operations, but very few applications on wood furniture surface coating equipment exist. The following table rates the technical feasibility of these add-on control technologies with respect to operations at the MBCI:

Technical Feasibility Evaluation

| Control Technology | Control Eff. | Required VOC inlet conc. | Other Considerations | Technical Feasibility |
|-------------------------------|--------------|-----------------------------|--|-----------------------|
| Regenerative Thermal Oxidizer | 94-98% | 1,000 - 10,000 ppm <50% LEL | VOC can be destroyed at the right temperature, residence time and gas composition. | high |
| Recuperative Thermal Oxidizer | 94-98% | 1,000 - 10,000 ppm <50% LEL | VOC can be destroyed at the right temperature, residence time and gas composition. | high |
| Catalytic Incineration | 92-98% | 100 - 1,000 ppm <25% LEL | Coatings are often not compatible with the catalyst. | low / moderate |
| Flare | 98% | >13,000 ppm 100% UEL | Concentration requirement is high and flame is difficult to sustain. | low |
| Carbon Adsorption | 94-95% | 10 - 10,000 ppm | Carbon adsorption does not work as effectively when more than one VOC is in the airstream. Some VOCs will be adsorbed at a slower rate which can cause an accumulation and create explosions or heat build-up within the carbon bed. | low |

The following concerns related to the control technologies presented in the above table should be noted:

1. For control technologies that require supplemental fuel, although VOCs are destroyed, nitrogen oxides and carbon monoxide are created as byproducts of the combustion process and emitted to the atmosphere.

2. In the case of carbon adsorption, a solid waste is created when the carbon used for adsorption is spent. In certain cases, this spent carbon may be classified as a hazardous waste.

Thermal oxidation is the only add-on control technology considered to have a high technical feasibility for operations at the MBCI. This choice of add-on control technology is consistent with that being employed at other similar facilities. Regenerative thermal oxidation is typically the most economical thermal oxidation technology and therefore, during the review of add-on control technologies for this BACT assessment, only regenerative thermal oxidation was evaluated for economic feasibility.

It should be of note that only two facilities in the U.S. EPA RACT/BACT/LAER Clearinghouse installed add-on controls: American Woodmark and Steelcase Wood Furniture. American Woodmark operates a flat spray line and Steelcase Wood Furniture operates both a flat line and a hang line. A flat line can only be used for those cabinets with little detail. Flat line processes allow for smaller booths and consequently, smaller air flow exhaust volumes. The flatline requires less airflow, which in turn reduces the cost of a thermal oxidizer, making the system more cost efficient. The American Woodmark facility utilizes recirculating booths and, therefore, higher VOC concentrations in the booths make thermal oxidation cost effective. Additionally, the American Woodmark facility installed a thermal oxidizer to avoid applicability of PSD requirements, and not as part of the BACT. The facility uses the thermal oxidizer to limit its VOC emissions to 250 tons per year so that it was not subject to the PSD review.

A flatline is not a feasible option for the cabinets produced by MBCI. MBCI must utilize electrostatic finishing process to finish the type and volume of cabinets required by its customers. The electrostatic finishing process requires more airflow than a flat line finishing process, resulting in increases control costs.

Steelcase Wood Furniture in Grand Rapids, MI controls only a portion of its hang (conventional) line with regenerative thermal oxidation. The tiecoat and sealer applications are controlled while the stain and topcoat applications are not controlled. The cost effectiveness of controlling independent portions of the electrostatic finishing line at MBCI is discussed below.

Add-On Control Cost Analysis:

A cost comparison was performed for the use of regenerative thermal oxidation. In order to identify which sections of the electrostatic finishing line are the most cost effective to control, the following scenarios were evaluated:

1. Control Sealer, Stain and Topcoat Booths
2. Control Toner Booths
3. Control Touch-Up Booth

The scenarios include control of the spray booths associated with these portions of the finishing line. In order to control the flash areas, significant additional cost would be required to redesign, reconstruct and enclose the areas and add substantial ductwork. The additional airflow that would be needed to capture the volatiles released in the flash area requires an increase in the size of the oxidizer, which would in turn increase the capital costs. Controlling the ovens was not evaluated since most of the emissions are from the booths and flash areas. Emissions from the ovens contribute small amounts to the total line emissions.

The toner and touch-up booths were evaluated separately because they are used intermittently. All cabinets do not receive toner or touch-up. The add-on control cost evaluation is conservative as it was assumed that 60% of all cabinets would receive toner and touch-up. The sealer, stain and topcoat booths were evaluated together since all

cabinets receive these coatings.

The MBCI proposes to construct a partial enclosure with 50% capture efficiency and route the VOC laden exhaust to RTO with 95% destruction efficiency. These efficiencies are used in calculating the cost effectiveness of the different options. Since the total enclosure of the system (booths, flash area and ovens) is considered impracticable (because of the large area to be evacuated, the exhaust air flow will be large with extremely low VOC concentration), MBCI believe that 50% reflects the capture that can be realistically obtained for the scenarios listed above. Also due to relatively low VOC concentration in the exhaust air, the destruction efficiency will be as low as 95%. Higher capture and destruction efficiencies may be achievable, but limited information is available at this time to determine the same. Therefore, as a worst case scenario, the minimum capture and destruction efficiencies noted above are assumed for these processes.

The detailed cost breakdown includes the following main elements:

Capital Cost:

- a) Base price: purchase price, auxiliary equipment, instruments, controls, and freight.
- b) Installation cost: foundations/supports, erection/handling, electrical, piping, insulation, painting, and site preparation.
- c) Indirect cost: in-house labor, engineering, supervision, construction/field expenses, construction fee, start up, performance test and contingencies.

Operating Cost:

- a) Direct operating cost: operating labor (operator, supervisor), labor and material maintenance, operating materials, and utilities (electricity, gas).

The following table provides a comparison of the various control scenarios.

Cost Evaluation

| Control Scenario | VOC Removed (tons/yr) | Total Annual Cost (\$) | Cost to Remove VOC (\$/ton) |
|-----------------------------------|--------------------------|---------------------------|--------------------------------|
| Stain, Sealer & Topcoat Booths | 181 | \$1,101,313 | \$6,089 |
| Toner Booths | 40 | \$366,221 | \$9,153 |
| Touch-Up Booths | 16 | \$436,614 | \$26,554 |

The economic analysis of the MBCI system operation shows a cost of \$6,089 to \$26,554 per ton of VOC removed using regenerative thermal oxidation to control the individual types of booths. The cost evaluation shows that it is cost effective to control the stain, sealer and topcoat booths. A further review of the data shows that the benefit of controlling the touch-up booths would only be an additional 16 tons VOC removed and likewise, controlling the toner booths would only remove an additional 40 tons VOC. The anticipated total emissions from this line will be 500 tons VOC per year and by controlling the stain, sealer and topcoat booths, we will reduce emissions by 181 tons per year such that the actual emissions from this line will be 319 tons per year.

TRANSFER EFFICIENCY

Even though the surface coating line was constructed prior to 1990, MBCI has implemented the use of high transfer efficiency application technologies, which satisfy the requirements of 326 IAC 8-2-12. The facility currently uses air assisted airless spray application in the touch up and toner

booths and electrostatic disc application systems in the sealer, stain and topcoat booths. These application methods are considered BACT for these finishing operations at the MBCI, as there are no other more efficient application methods available for surface coating finished cabinets.

WORK PRACTICE STANDARDS

MBCI has over the past few years implemented a number of work practices in its continuing effort to reduce VOC and HAP emissions and to satisfy the MACT standard requirements of 40 CFR 63.803. Specifically, MBCI has developed and maintained a work practice implementation plan, which includes the following work practices and standards:

1. Operator training course
2. Leak inspection and maintenance plan
3. Cleaning and washoff solvent accounting system
4. Chemical composition of cleaning and washoff solvents
5. Spray booth cleaning
6. Storage requirements
7. Description of circumstances under which conventional air spray guns may be used
8. Line cleaning
9. Gun cleaning
10. Washoff operations
11. Formulation assessment plan for finishing operations

Continued implementation of the work practices under the MACT standard will also satisfy the requirement to implement BACT under 326 IAC 2-2-3 and 326 IAC 8-1-6.

BACT DETERMINATION

The BACT for VOCs at the electrostatic finishing line at MBCI will be:

1. Regenerative Thermal oxidation on the stain, sealer and topcoat booths to limit emissions to 200 tons per year. The Permittee has estimated that it will take a period of 270 days from the effectiveness date of the permit to install and start operation of the RTO. The permit specifies the limiting conditions during this transition period.
2. Limit the VOC usage for the toner and topcoat booth to less than 119 tons per year.
3. High transfer efficiency application technologies through the use of electrostatic disc and air-assisted airless spray applications.
4. Operation and maintenance standards as per the MACT standard 40 CFR 63.803.
5. For the transition period from the date of effectiveness of the permit to the date of installation and operation of the RTO, the VOC usage for the stain, sealer and topcoat booths shall be limited such that on an annual basis it is limited to less than 381 tons.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons/yr of VOC. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A,

Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-3-2 (Particulate emissions limitations, work practices, control technologies)

- (a) The electrostatic finishing line operation is subject to the requirements of this rule. Pursuant to 326 IAC 6-3-2 (d) the electrostatic finishing line shall be controlled by a dry particulate filter or an equivalent control device and operate the control device in accordance with manufacturer's specifications.
- (b) As this permit is being issued pursuant to 326 IAC 2-7, therefore, pursuant to 326 IAC 6-3-2 (d) (3), the electrostatic finishing line is exempt from the requirements in 326 IAC 6-3-2 (d) (2).

326 IAC 8-1-6 (New facilities; general reduction requirements)

The electrostatic finishing line was constructed after January 1, 1980 and has potential emissions greater than 25 tons per year. Therefore, pursuant to 326 IAC 8-1-6 (New facilities; general reduction requirements), the requirements of BACT shall apply to this line. Pursuant to 326 IAC 8-1-6, the source's BACT requirements under 326 IAC 2-2 (PSD) are equivalent to BACT under this rule.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

The electrostatic finishing line was constructed before July 1, 1990 and is located in the Dubois County. Therefore pursuant to 326 IAC 8-2-1 (a) (3) and (4), this line is not subject to the requirements of this rule. The Permittee has voluntarily agreed to implement the requirements of this rule. Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating), the surface coatings applied to wood furniture and/or wood components shall utilize one or more of the following application methods:

Airless Spray Application
Electrostatic Spray Application
Heated Airless Spray Application
Brush or Wipe Application
High Volume Low Pressure HVLP

Air-Assisted Airless Spray Application
Electrostatic Bell or Disc Application
Roller Coating
Dip-and-Drain Application
Aerosol Spray Cans

The toner and touchup booths use the air assisted airless spray application and sealer, stain and topcoat booths use electrostatic disc application, and is therefore in compliance with 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating).

Testing Requirements

Within 60 days of achieving maximum production rate, but no later than 6 months after issuance of this permit, the Permittee shall perform VOC and efficiency testing utilizing methods as approved by the Commissioner to show compliance with the VOC limit. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that source can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to these modifications are as follows:

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C – Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (c) The regenerative thermal oxidizer shall operate at all times that electrostatic finishing line is in operation. When operating, the regenerative thermal oxidizer shall maintain a minimum zone operating temperature of 1350° F before the stack test, and a minimum zone operating temperature and fan amperage as determined from the most recent compliant stack test, as approved by IDEM. The temperature shall correlate to an overall VOC capture efficiency of 50% and destruction efficiency of 95%.
- (d) A continuous monitoring system shall be calibrated, maintained, and operated on the regenerative thermal oxidizer for measuring operating temperature. The output of this system shall be recorded, and that temperature shall be greater than or equal to the temperature used to demonstrate compliance during the most recent compliance stack test.
- (e) The duct pressure or fan amperage shall be observed at least once per week when the regenerative thermal oxidizer is in operation. This pressure or amperage shall be maintained with a range as established in most recent compliant stack test.
- (f) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the reading is outside the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

Conclusion

The construction and operation of this proposed modification shall be subject to the conditions of the attached Part 70 Significant Source Modification No. 037-13893-00051.

**Appendix A: Emissions Calculations
VOC and Particulate
From Coating Operations**

**Company Name: MasterBrand Cabinets, Inc. -Plants 4/22
Address City IN Zip: 614 West Third Street, Ferdinand, IN 47532
CP: 037-13893
Plt ID: 037-00051
Reviewer: GS
Date: 15-Jul-02**

| Material | No.of booths | Density (Lb/Gal) | Weight % Volatile (H2O & Organics) | Weight % Water | Weight % Organics | Volume % Water | Volume % Non-Volatiles (solids) | Gal of Mat. (gal/unit) | Maximum (unit/hour) | Pounds VOC per gallon of coating less water | Pounds VOC per gallon of coating | Potential VOC pounds per hour | Potential VOC pounds per day | Potential VOC tons per year | Particulate Potential (ton/yr) | Transfer Efficiency* |
|-----------------------------------|--------------|------------------|------------------------------------|----------------|-------------------|----------------|---------------------------------|------------------------|---------------------|---|----------------------------------|-------------------------------|------------------------------|-----------------------------|--------------------------------|----------------------|
| Alpine Toner - Toner | 1 | 7.91 | 90.62% | 0.049% | 90.6% | 0.039% | 0.70% | 0.00700 | 766.000 | 7.17 | 7.16 | 38.41 | 921.94 | 168.25 | 0.87 | 95% |
| Fawn No-wipe - Stain | 2 | 7.32 | 98.78% | 0.001% | 98.8% | 0.001% | 0.28% | 0.01300 | 766.000 | 7.23 | 7.23 | 144.01 | 3456.12 | 630.74 | 0.19 | 95% |
| Electrostatic Self Seal - Sealer | 2 | 7.62 | 75.28% | 0.0% | 75.3% | 0.0% | 19.94% | 0.02400 | 766.000 | 5.74 | 5.74 | 210.91 | 5061.93 | 923.80 | 7.58 | 95% |
| Electrostatic Self Seal - Topcoat | 2 | 7.62 | 75.28% | 0.0% | 75.3% | 0.0% | 19.94% | 0.02400 | 766.000 | 5.74 | 5.74 | 210.91 | 5061.93 | 923.80 | 7.58 | 95% |

* Electrostatic disc application

| | | | | | |
|----------------------------------|---|---------------|-----------------|----------------|--------------|
| State Potential Emissions | Add worst case coating to all solvents | 604.25 | 14501.92 | 2646.60 | 16.23 |
|----------------------------------|---|---------------|-----------------|----------------|--------------|

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

One 2 MMBtu/hour curing oven and One 1.16 MMBtu/hour RTO

Company Name: MasterBrand Cabinets, Inc. -Plants 4/22

Address City IN Zip: 614 West Third Street, Ferdinand, IN 47532

CP: 037-13893

Plt ID: 037-00051

Reviewer: GS

Date: October 21, 2002

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

3.2

27.7

| | Pollutant | | | | | |
|-------------------------------|-----------|-------|-----|-------------|-----|------|
| | PM* | PM10* | SO2 | NOx | VOC | CO |
| Emission Factor in lb/MMCF | 1.9 | 7.6 | 0.6 | 100.0 | 5.5 | 84.0 |
| | | | | **see below | | |
| Potential Emission in tons/yr | 0.0 | 0.1 | 0.0 | 1.4 | 0.1 | 1.2 |

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

TSD Appendix B - Air Quality Analysis

Source Background and Description

| | |
|--------------------------------------|--|
| Source Name: | MasterBrand Cabinets, Inc. -Plants 4/22 |
| Source Location: | 614 West Third Street, Ferdinand, IN 47532 |
| County: | Dubois |
| SIC Code: | 2434 |
| Operation Permit No.: | 037-5930-00051 |
| Operation Permit Issuance Date: | Not Yet Issued |
| Significant Source Modification No.: | 037-13893-00051 |
| Modeling Reviewer: | Jeffrey Stoakes |

Introduction

MasterBrands Cabinets, Inc.(MasterBrands) has applied for a Significant Source Modification(SSM) permit to construct and operate an electrostatic finishing line near Ferdinand in Dubois County, Indiana. The site is located at Universal Transverse Mercator (UTM) coordinates 511453.0 East and 4230082.0 North. The proposed facility would consist of electrostatic finishing line. Dubois County is designated as attainment for the National Ambient Air Quality Standards. These standards for Nitrogen Dioxide (NO₂), Sulfur Dioxide (SO₂), Carbon Monoxide (CO) and Particulate Matter less than 10 microns (PM₁₀) are set by the United States Environmental Protection Agency (U.S. EPA) to protect the public health and welfare.

Air Quality Analysis Objectives

The OAQ review of the air quality impact analysis portion of the permit application will accomplish the following objectives:

- A. Establish which pollutants require an air quality analysis based on source emissions.
- B. Determine the ambient air concentrations of the source's emissions and provide analysis of actual stack height with respect to Good Engineering Practice (GEP).
- C. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS)
- D. Perform an analysis of any air toxic compound for the health risk factor on the general population.

Summary

Masterbrands has applied for a SSM construction permit to construct and operate an electrostatic finishing line, near Ferdinand in Dubois County, Indiana. The SSM application was prepared by Keramida of Indianapolis, IN. Dubois County is currently designated as attainment for all criteria pollutants. OAQ conducted Hazardous Air Pollutant (HAPs) modeling and all HAP 8-hour maximum concentrations modeled below 0.5% of each Permissible Exposure Limit (PEL). There was no impact review conducted for the nearest Class I area, which is Mammoth Cave National Park in Kentucky. No Class I analysis is required if a source is located more than 100 kilometers (61 miles) from the nearest Class I area.

Part A - Pollutants Analyzed for Air Quality Impact

Indiana Administrative Code (326 IAC 2-2) PSD requirements apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a new major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1. IDEM requires that industries supply information about the use of certain toxic chemicals called Hazardous Air Pollutants (HAPs), which are listed, in the 1990 Clean Air Act Amendments. If a facility is expected to release more than 10 tons per year of a single HAP, or over 25 tons per year of all HAPs they use, then an air quality impact analysis is conducted before a permit is issued. VOCs, Xylenes and Total Hazardous Air Pollutants(HAPS) will be emitted from MasterBrands and an air quality analysis is required for Xylene and Total HAPS, which exceeded their significant

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emission rates as shown in Table 1. It should be noted that all emissions are based on the Best Available Control Technology (BACT) determination and other limitations resulting from the OAQ review of the application.

| TABLE 1 – MasterBrands Significant Emission Rates (tons/yr) | | |
|--|---|---|
| <u>Pollutant</u> | <u>Maximum Allowable Emissions</u> | <u>Significant Emission Rate</u> |
| Xylene | 30.57 | >10.0 |
| Total HAPS | 40.26 | >25.0 |
| VOC (ozone) | 319 | 40.0 |

Significant emission rates are established to determine whether a source is required to conduct an air quality analysis. If a source exceeds the significant emission rate for a pollutant, air dispersion modeling is required for that specific pollutant.

Part B - Significant Impact Analysis

An air quality analysis, including air dispersion modeling, was performed to determine the maximum concentrations of the source emissions on receptors outside of the facility property lines. A worst-case approach for emission estimates has been taken due to the nature of the operational capability of the facility.

Model Description

The Office of Air Quality review used the Industrial Source Complex Short Term (ISCST3) model, Version 3, dated August, 2002 to determine maximum off-property concentrations or impacts for each pollutant. All regulatory default options were utilized in the United States Environmental Protection Agency (U.S. EPA) approved model, as listed in the 40 Code of Federal Register Part 51, Appendix W A Guideline on Air Quality Models. The Auer Land Use Classification scheme was referred to determine the land use in a 3 kilometer (1.9 miles) radius from the source. The area is considered primarily agricultural, therefore a rural classification was used. The model also utilized the Schulman-Scire algorithm to account for building downwash effects. Stacks associated with the electrostatic finishing line are below the Good Engineering Practice (GEP) formula for stack heights. This indicates wind flow over and around surrounding buildings can influence the dispersion of concentrations coming from the stacks. 326 IAC 1-7-3 requires a study to demonstrate that excessive modeled concentrations will not result from stacks with heights less than the GEP stack height formula. These aerodynamic downwash parameters were calculated using U.S. EPA's Building Profile Input Program (BPIP).

Meteorological Data

The meteorological data used in the ISCST3 model consisted of the latest five years of available surface data from the Evansville, Indiana National Weather Service station merged with the mixing heights from Peoria, Illinois National Weather Service station. The 1990-1994 meteorological data was purchased through the National Oceanic and Atmospheric Administration (NOAA) and National Climatic Data Center (NCDC) and preprocessed into ISCST3-ready format with a version of U.S. EPA's PCRAMMET.

Receptor Grid

Ground-level points (receptors) surrounding the source are input into the model to determine the maximum modeled concentrations that would occur at each point. OAQ modeling utilized receptor grids out to 20 kilometers (12.4 miles) for all pollutants. Dense receptor grids surround the property with receptors spaced every 100 meters (328 feet) out to 2 kilometers (1.25 miles), receptors spaced every

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200 meters (656 feet) from 2 kilometers to 4 kilometers (2.5 miles), receptors spaced every 500 meters (1640 feet) from 4 kilometers to 10 kilometers (6.2 miles) and 1000 meters (3280 feet) from 10 kilometers to 20 kilometers. Discrete receptors were placed 100 meters or 328 feet apart on MasterBrands property lines.

Modeled Emissions Data

The modeling used the emission rates listed in the application and was reviewed and revised by OAQ. Modeling results reflect these emissions and are considered the controlling results for this air quality analysis.

Part C - Ozone Impact Analysis

Ozone formation tends to occur in hot, sunny weather when NO_x and VOC emissions photochemically react to form ozone. Many factors such as light winds, hot temperatures and sunlight are necessary for higher ozone production. As per OAQ instruction, Keramida submitted its own ozone transport analysis from the MasterBrands. This included a wind rose analysis, emissions data review and ozone air quality review. The results of the wind rose analysis and the RPM-IV model show that any potential plume emitted from the facility would fall out to the northeast and relatively close to the facility.

OAQ Three-Tiered Ozone Review

OAQ incorporates a three-tiered approach in evaluating ozone impacts from a single source. The first step is to determine how VOC emissions from the new source compare to area-wide VOC emissions from Dubois County as well as the surrounding counties of Daviess, Martin, Orange, Perry, Pike, and Spencer. Results from this analysis show MasterBrands= 319 tons/yr of VOC emissions would comprise less than 1% of the area-wide VOC emissions from point, area, onroad and nonroad mobile source and biogenic (naturally-occurring emissions from trees, grass and plants) emissions.

A second step is to review historical monitored data to determine ozone trends for an area and the applicable monitored value assigned to an area for designation determinations. This value is known as the design value for an area. The nearest ozone monitors within this region is in Perry County which is 26 kilometers or 16 miles to the west-southwest of the proposed site. And is considered upwind of the proposed facility. The design value for the Perry County monitor for the 1-hour ozone standard over the latest three years of monitoring data is 116 parts per billion (ppb). Wind rose analysis indicates that prevailing winds in the area occur from the southwest and west-southwest during the summer months of May through September when ozone formation is most likely to occur. Ozone impacts from the MasterBrands proposed facility would likely fall north, northeast and east northeast of the facility, away from the existing ozone monitors in the region.

A third step in evaluating the ozone impacts from a single source is to estimate the source individual impact through a screening procedure. The Reactive Plume Model-IV (RPM-IV) has been used in past air quality reviews to determine 1-hour ozone impacts from single VOC/NO_x source emissions. RPM-IV is listed as an alternative model in Appendix B to the 40 Code of Federal Register Part 51, Appendix W *Guideline on Air Quality Models*. The model is unable to simulate all meteorological and chemistry conditions present during an ozone episode (period of days when ozone concentrations are high). Results from RPM-IV are an estimation of potential ozone impacts. Modeling for 1 hour ozone concentrations was conducted for July 12, 1995 (a high ozone day) to compare to the ozone National Ambient Air Quality Standard (NAAQS) limit. The maximum cell concentration of ozone for each time and distance specified was used to compare to the ambient ozone. OAQ modeling results assumed the short-term emission rates of NO₂ and VOCs and are shown in Table 2. The impact (difference between the plume-injected and ambient modes) from MasterBrands was 2 ppb early in the plume development. All ambient plus plume-injected modes were below the NAAQS limit for ozone at every time period and every distance. No modeled 1-hour NAAQS violations of ozone occurred.

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| TABLE 2 - RPM-IV Modeling for MasterBrands | | | | |
|--|-----------------|----------------|-----------------------|----------------------|
| NAAQS Analysis for Ozone (July 12, 1995) | | | | |
| <u>Time</u> | <u>Distance</u> | <u>Ambient</u> | <u>Plume-Injected</u> | <u>Source Impact</u> |
| (hours) | (meters) | (ppb) | (ppb) | (ppb) |
| 700.0 | 116.0 | 66.8 | 67.1 | 0.3 |
| 800.0 | 4930.0 | 80.3 | 67.1 | -13.2 |
| 900.0 | 18000.0 | 93.9 | 95.9 | 2.0 |
| 1000.0 | 33600.0 | 106 | 107 | 1.0 |
| 1100.0 | 45400.0 | 114 | 114 | 0 |
| 1200.0 | 57800.0 | 117 | 117 | 0 |
| 1300.0 | 73600.0 | 118 | 117 | -1 |
| 1400.0 | 88100.0 | 118 | 117 | -1 |
| 1500.0 | 102000.0 | 118 | 116 | -2 |
| 1600.0 | 116000.0 | 117 | 115 | -2 |
| 1700.0 | 129000.0 | 117 | 114 | -3 |
| 1800.0 | 141000.0 | 117 | 114 | -3 |
| 1900.0 | 153000.0 | 116 | 114 | -2 |

In summary, ozone formation is a regional issue and the emissions from MasterBrands will represent a small fraction of VOC emissions in the area. Ozone contribution from Masterbrands emissions is expected to be minimal. Ozone historical data shows that the area monitors have design values below the ozone NAAQS of 120 ppb and the MasterBrands ozone impact based on the emissions and modeling will have minimal impact on ozone concentrations in the area.

Part D - Hazardous Air Pollutant Analysis and Results

As part of the air quality analysis, OAQ requests data concerning the emission of 188 Hazardous Air Pollutants (HAPs) listed in the 1990 Clean Air Act Amendments which are either carcinogenic or otherwise considered toxic. These substances are listed as air toxic compounds on the State of Indiana, Department of Environmental Management, Office of Air Quality's construction permit application Form Y. Any HAP emitted from a source will be subject to toxic modeling analysis. The modeled emissions for each HAP are the total emissions, based on assumed operation of 8760 hours per year.

Major PSD sources emitting 10 tons/year for one HAP or combined HAPs over 25 tons/year will trigger a Cumulative Exposure Project (CEP) health benchmark analysis by IDEM. These CEP benchmarks, developed by U. S. EPA, represent an estimated HAP concentration that might cause 1 case of cancer if 1 million people were in constant contact with the HAP for 24 hours a day for 70 years.

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OAQ performed toxic modeling using the ISCST3 model for all HAPs. Maximum 8-hour concentrations were determined and the concentrations were recorded as a percentage of each HAP Permissible Exposure Limit (PEL). The PELs were established by the Occupational Safety and Health Administration (OSHA) and represent a worker's exposure to a pollutant over an 8-hour work day or a 40-hour work week. In Table 3 below, the results of the HAP analysis with the emission rates, modeled concentrations, CEP benchmarks and the percentages of the PEL for each HAP are listed. All HAPs concentrations were modeled below 0.5% of their respective PELs. The 0.5% of the PEL represents a safety factor of 200 taken into account when determining the health risk of the general population. None of the CEP health benchmarks were exceeded.

TABLE 3 - Hazardous Air Pollutant Analysis

| <u>Hazardous Air Pollutants</u> | <u>Total HAP Emissions</u> | <u>Maximum 8-hour concentrations</u> | <u>CEP Benchmark</u> | <u>PEL</u> | <u>Percent of PEL</u> |
|---------------------------------|----------------------------|--------------------------------------|----------------------|------------|-----------------------|
| | (tons/year) | (ug/m3) | (ug/m3) | (ug/m3) | (%) |
| Ethyl Benzene | 6.52 | 96.8 | 1000 | 435000.0 | 0.022 |
| Cumene | 1.36 | 54.3 | 400 | 245000.0 | 0.022 |
| Methanol | 0.0006 | 0.033 | 10000 | 50000.0 | 0.0000066 |
| MIBK | 0.02 | 0.593 | 80 | 410000 | 0.00014 |
| Toluene | 1.78 | 15.6 | 400 | 750000.0 | 0.0021 |
| Xylene | 30.57 | 417 | 430 | 435000.0 | 0.096 |